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Vol 4 No 26

Timex loses 400 jobs despite Sinclair rescue

SINCLAIR Spectrum manufacturer Timex has announced it is making 400 people out of its 1300 strong workforce redundant The redundancies will all come from people working on the manufacture of the Spectrum Plus

The lay-offs will go ahead despite the news of the rescue of Sinclair Research by publishing magnate Robert Maxwell

"By mid-July, we will have built out all our orders from Sinclair We have had no orders for any more micros from Sinclair – in fact, I don't think any are being made anywhere at the moment," said Graham Hay, manager of human resources at Timex UK.

It is likely that it will be some months before Sin-

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MELBOURNE HOUSE has announced it is to release a game based on the Whitbread Round the World yacht race, which begins in September

"We hope to produce the definitive yachting simulation, with the same sort of detail as you would find in a flight simulation," said Paula Byrne, publicity manager at Melbourne House

cont. page 4 ▶

THE LATEST cartoon hero to face computerisation is Rupert the Bear

The program, called Rupert and the Toymaker's Party has Rupert finding his way to a party by following a trail of invitations pinned to walls by his friends The game was written by the new Quicksilva team

Rupert *has been licensed to Argus Press Software from the* Daily Express *to coincide with his 65th birthday this autumn.*

Rupert *costs £7 99 on Spectrum or C64*



Business retailers doubtful over F1e

ACT has been experiencing some difficulties over its £595 F1e machine.

The machine, a cut-down version of the Apricot F1, is intended to appeal to higher education establishments and home users alike While the company has received a number of inquiries from educational users, it has largely been ignored by ACT's normal retail outlets ACT is still trying to sell the machine to individuals through its normal business outlets, which are more interested in the larger, more powerful machines

"We have none in stock right now, as we have not been asked by the customers," commented one dealer in Croydon A typical comment was that of an outlet in north London "We don't hold stocks unless there is a demand, and we have not heard of any demand for the F1e "

ACT's group marketing di-

continued on page 4 ▶

THE WAY OF THE exploding fist

Become a master of this mysterious ancient art: progress from novice to Tenth Dan and test your strength and discipline. You can control your character with either joystick or keyboard – 18 different manoeuvres including blocks, flying kicks, leg sweeps, roundhouse and even somersaults!

Challenge the computer, facing opponents of progressively greater skill, or compete with a friend. THE WAY OF THE EXPLODING FIST has it all – addictive competitive action, dazzling graphic animation and sound. The wait is over – you are about to face the challenge of a lifetime! "Spectacular, startlingly original epic, most televisual game I have encountered."- Daily Mail
"Quite simply the best program." - Popular Computing Weekly









from MELBOURNE HOUSE



GREENS COMET LASKYS Rumbelows
WOOLWORTH

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Vol 4 No 26

The BBC Midi Connection

EDITORIAL

ACT must be a funny company.

Its Fle micro is actually quite a natty little machine at £595 and certainly not only for use in schools and colleges which is the market ACT claims to be aiming for. Indeed, the company seems to be blissfully unaware that it is sitting on a potential best seller.

What do you get for your £595? Well, actually rather a lot. 8088 16-bit processor, 256K Ram, a built-in disc drive and Apricot software compatibility. On to this you can either add a monitor or as a considerably less expensive option – around £30 – a modulator unit which allows you to connect the micro to an ordinary colour TV.

At the price it knocks the spots off all the other home micros masquerading as home business machines. It makes the BBC look a little sick – the price includes a BBC Basic emulator – and makes the BBC B+ look ridiculous. Even the QL at £399 doesn't come off too well – there is stacks of proven and tested hard business and utility software which runs on the Fle developed for the Apricot range, the disc beats Microdrives hands down and above all the Fle is built to last.

So far so good, but unfortunately that's the whole story.

Most people don't know the Fle exists, and ACT has always entirely neglected to promote the product for the home user.

The lack of demand they perceive for it from the individual user – apparently there are loads in the warehouse that nobody seems to want – is due to the fact that those who might buy it – up-grading home users – have never heard of it, never mind seen one.

Perhaps ACT has looked at the strains and upheavals within the home micro market and consciously decided to steer well clear. If so they are wrong. Putting the machine into a high street store like WHSmiths or Boots they could compete directly with US imports like the Commodore C128, Amiga and the Atari ST.

ACT should stop fooling around with the Fle in specialist business micro stores and the now limited education market. The Fle is a fine machine and deserves to be pushed hard and properly marketed into the top-end home market where it just could clean up.

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88,662 copies sold every week (Jan-June 1984 ABC)

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Computer Trade Association Magazine of the Year

Acorn suspends shares again

ACORN has suspended its shares for the second time this year.

The company has continued in severe financial difficulties, since Olivetti's £10 million rescue package in February this year.

Acorn is blaming a very substantial decline in computer sales from the levels predicted earlier this year, which has led to a significant deterioration in Acorn's financial position since the Olivetti deal.

Its new BBC B+ machine, launched at the beginning of May, has been cautiously received by retailers and customers.

Acorn's financial advisor, Close Brothers, has been asked by the Acorn board and Barclays Bank to submit a refinancing scheme to present to major shareholders this week.

This move follows the appointment of Alex Uboldi as managing director. Uboldi is also a director of Olivetti.

When Acorn first suspended its shares in February, they stood at 28 pence. For the last three weeks, the price has remained around 12-13 pence, after plunging to a low of 5 pence last month.

Apricot F1e difficulties

◄ continued from page 1

rector, John Leftwich said, "we had a few thousand enquiries from individuals in the week following the price reduction from £795 to £595, but there is no deliberate push into the home market.

"It's not our main business an we have turned a bit of blind eye to it. Still, I think we could get volume sales in the home market with the F1e."

Timex loses 400 despite rescue

◄ continued from page 1

clair's £30m worth of computer stocks has sold through distributors. Graham Hay stressed, however, that Timex continues to produce Sinclair's flat screen TV.

Sinclair's other main manufacturers, AB Electronics and Thorn EMI declined to comment on Timex's decision.

A board meeting was held at Sinclair last Wednesday to discuss the immediate implications of Maxwell's rescue, but so far no announcement following the initial statement has been made. More information may be forthcoming when the purchase of Sinclair Research by Hollis and the three for one rights issue goes through (see *Popular Computing Weekly* 20 June).

Of the actual role Sir Clive will play as life President, opinions vary. Sir Clive himself was in the US last week.

"I would expect Sir Clive's involvement in Sinclair to continue for some time," said Dr David Potter, head of Psion, a software which has always been closely associated with Sinclair.

"Sir Clive will head up research at Sinclair, and give guidance and help to the company," affirmed Sinclair's company secretary William Matthews. "I'm sure Maxwell will take an active part, but certainly the new chief executive officer will have more of an executive role."

Matthews was reluctant to comment on reports that Sinclair's audited yearly accounts, when produced, would show a loss for the year. "I cannot comment on any suggestions of a loss as the audit has not yet been finalised. Normally the accounts are announced in August, but I don't know what will happen as a result of the takeover – we will have to fall in with the other Maxwell companies."

It is not clear, either, what sort of role Sinclair director Robb Wilmot will play following the takeover. Wilmot, part-time chairman of ICL, was taken on to the board of Sinclair to oversee fund-raising to about £50m for a silicon wafer chip factory. It is unclear whether plans to raise the money and set up the separate company and factory will go ahead, despite Sinclair's announcement last week that it had completed successful testing of the silicon wafers.

At Sinclair US where ex-managing director Nigel Searle is heading up an operation to sell the flat screen TV and the QL, it looks as though nothing will change immediately. "The company will continue to operate as was for the time being," Bill Matthews continued.

Sir Clive Sinclair shows the successfully tested silicon wafers (right) compared to a normal circuit board (left)

Ministerial backing for Mosaic's project

MOSAIC'S latest project is a computer game based on the satirical television series *Yes, Minister*.

The game design is being written by Tigress Marketing, the team responsible for the script to Domark's James Bond game *View to a Kill*, and the programming is to be by The Ram-Jam Corporation, whose first release was the graphic and text adventure *Valkyrie 17*.

The object of the game is to ensure that absolutely nothing is achieved, according to a Mosaic spokesman.

This is because the player takes the role of Bernard, minister Jim Hacker's personal assistant, who must try to please both his master and Sir Humphrey, who controls his future in the Civil Service.

The game will be mainly text-based, and will involve making strategic decisions in pursuit of the main objective of total stasis. The player will be scored on how little is achieved.

Scheduled for release in November, *Yes, Minister* will be for the Spectrum 48K, BBC B, Commodore 64 and Amstrad at £9.95 on cassette and £12.95 on disc.

Melbourne plans

◄ continued from page 1

"The game should be available in the autumn to coincide with the initial stages of the race."

Later in the autumn, Melbourne House is to release the first part of its long-awaited *Lord of the Rings* trilogy.

Three separate adventures based on the three J. R. R. Tolkien books which make up *Lord of the Rings* will eventually be launched.

Before that, in August, the company plans to release *Mugsy's Revenge*, the follow-up to last year's *Mugsy*.

Mugsy's Revenge will use the same "printed balloons" type text input and detailed graphics that characterised its predecessor.

US Gold takes on Epyx games

US GOLD has finally signed the deal with Epyx to take over the production of Epyx's titles in this country

Previously, the UK licence has been held by CBS, but CBS withdrew from the contract some weeks ago Epyx's contract with US Gold will become effective from July 1.

"We will be selling both new titles and the existing ones such as *Pitstop II* and *Impossible Mission*, which will be repackaged with the US Gold logo on the boxes," explained Tim Chaney, general manager of US Gold

"The first of the new titles will be *Summer Games II*, *FBI*, and *Winter Games*, which we are putting on cassette for the Commodore 64," Tim continued "We are also working on *Impossible Mission* for the Spectrum, and eventually both *Summer Games II* and *Winter Games* will be converted for the Spectrum and Amstrad, but that's a long way off"

In all, US Gold plans to bring over eight of Epyx's games to the UK in the next year All are expected to cost £9 95, US Gold's usual price

Epyx is one of the US's most successful software companies The first showings of *Summer Games II* and *Winter Games* were highlights of the Summer CES Show held in Chicago at the beginning of this month.

Winter Games (left)

Healing touch from Talent's Doctor

TALENT computer systems has announced that its *Cartridge Doctor* for the QL is now available

The *Cartridge Doctor* is designed to retrieve information from corrupted microdrive cartridges

The package claims that, in most cases, it will recover files which have been accidentally deleted, and recover files with damaged blocks

Cartridge Doctor costs £21 95 Details from. Talent, Curran Building, 101 St James Road, Glasgow (041-552 2128)

Discs galore at Microfair

THE SIXTEENTH ZX Microfair took place last weekend, at the fair's new home at the Horticultural Hall near Victoria Station in London

Disc systems for the QL were much in evidence Quest and Medic were both demonstrating their expansion modules and disc drives, although Medic's disc drives did not arrive on the stand until well into the day Dual and single 800K 5¼ inch drives were also being shown by Viglen Computer Supplies Viglen also had a dual 1 6m system on display

Modem House, which now distributes the OEL/Prism modems, the VTX 5000, 1000 and 2000, took a stand while Intergalactic Robots showed its Zero 2 robot.

Sinclair was selling its full range, including the flat screen TV from the stand, but had the flat screen TV from the stand, but had no new products on show.

Letters

Flower power

This three-line program for the Spectrum displays a short cartoon film. The story begins in a forest of trees and flowes, through which we are riding in a train. After a short white-out, we return to the forest to find that the trees and flowers are dancing! They dance faster and faster, sometimes so fast that they stand still or even move backwards, making more and more intricate patterns. The dance builds to a frenzied climax; then, suddenly, the scene shifts to the freeway, where multi-coloured cars are driving in formation.

```
10 RESTORE FOR i=0 TO 11 READ x: POKE 23306+i,x: NEXT i
20 DATA 38,0 0 17 0,64 1 0 27,237 176,201
30 FOR n=18 TO 78: POKE 23306,n: FOR m=0 TO 255: POKE 23307,m: RANDOMIZE USR 23306: PAUSE 1: NEXT m: NEXT n
```

The short machine-code routine moves 6912 consecutive bytes from a specified position in memory to the display and attributes file. The source and destination overlap so that in the first part of the program, a byte copied on to the screen from the top of Rom is repeated at regular intervals which decrease from frame to frame. This gives the cartoon its recursive character set. Most characters, in pixel form, have blanks no top and bottom, these give regularly-spaced zero bytes which when copied into the attributes file, become interpreted as "black paper, black ink", these for the tree trunks.

Peter Cameron
Godstow Road
Wolvercote
Oxford

All I can say is you have a very vivid imagination.

Basic problems

With reference to my program published in the 21 February issue which added 14 extra commands to the Spectrum's Basic.

Some people still seem to be having problems. Firstly the commands should be typed in upper case. Secondly the commands to scroll the screen up and down are *Scroll U* and *Scroll D* respectively. Lastly the hex address at 64205 was unclear – it is 0A.

I hope this sorts out any remaining problems.

Robert Kirtland
Thame
Oxon

Speed it up

In the *Peek and Poke* column Phil Rogers says that the Commodore 64 1541 disc drive cannot be speeded up.

This isn't entirely true. There are now several programs on the market that allow fast loading from disc, including those from Arrow and DoSoft. They speed up disc loading considerably with most commercial disc programs loaded in less than a minute – *The Hobbit* for example takes only 30 seconds.

M Buckton
Watford
Herts

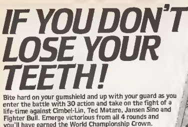
Boring hippies

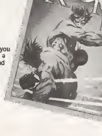
I was insulted by the Adventure Corner in the June 8 issue.

Tony Bridge's reference to Supertramp being 'old boring hippies' is biased and totally unfounded.

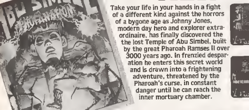
I'm sure I speak for thousands of Supertramp fans everywhere.

Matthew Williams
Elmcroft Avenue
Wanstead
London E11









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Gold to platinum

***Graham Taylor** talks to software converts Platinum Productions*

Back in the olden days when there were thousands of software companies all based in people's bedrooms and operating on a tiny budget things seemed simple

People grew up with either a Vic20 or a ZX81, learnt machine code on it and eventually became either a Commodore or Spectrum-based software house A successful game sold a few thousand and earned you a new Mini or similar The programmers were also the managing directors, marketing team, media space buyers and PR people

For better and worse, those days are gone forever A few large companies now dominate the market Merchandising deals are struck and marketing strategies are planned Someone invented the term 'user base' and realised that having spent all that money on duplication, artwork, T-shirts, badges and colour advertising, it was silly to put the game out on only one machine

If it's any good convert it – get the biggest user base you possibly can Get it right and the Mini turns into a black turbo Porsche All you need is for someone to take your winning game and crank it out on other machines

The problem is this Really good games are developed by the kind of people who would have been the one man band mini-owning software houses of yesteryear Those people who know their machine back to front, have nurtured it and repaired it with sticky tape countless times. Great games are coaxed out of the machine lovingly using every possible programming permutation and trick

Suddenly the Porsche-owning bosses want it converted to another, fundamentally different, machine No wonder the end results are very frequently embarassingly awful.

People who can translate games well are obviously worth a lot to a large company In this case, a Colt and a BMW at least.

David Anderson and Ian Morrison call themselves Platinum Productions and if you peer closely enough at the insert sleeves of some of the games mentioned here, you may find that name in the onlest letters imaginable somewhere at the bottom. David and Ian are both 18 years old and specialise in converting games from the Commodore to the Spectrum A friend of theirs called Robin Muir has the soul-destroying tasks of converting the music – three sophisticated synthesiser channels into one utterly primitive one Ian owns the BMW and David has the Colt

It works like this Just before the release of a new Commodore game, they are sent a copy with a time scale for conversion to the Spectrum – around 10 weeks on average That means solving a large number of technical problems in a short time It isn't easy money

They began in the classic tradition, selling machine code games for the ZX81 in the classified ads They also sold a suite of games to Romik, raking in a few hundred quid or so Next came a few Spectrum titles, including *Brain Damage* and *Exterminator*, both issued by Silversoft.

The key program, though, was *Robotron* – an accurate copy of the aged arcade game. It has never actually seen the light of day, but was shown to Ocean who were impressed.

In fact, so impressed, they wondered whether David and Ian would like some work converting this Commodore game called *Beach-Head* that was about to be released

David and Ian returned home to Ayrshire with a Commodore 64 They didn't have a clue what went on inside it, but produced the Spectrum version in seven and a half weeks Ian explained how it worked

"You don't really need to know how the Commodore works to do the conversion The Spectrum works quite differently anyhow We looked first at the actual screen display to see what was static and what moved. The central routine demanded a lot of fast graphics code to get the sprites moving "

Over the years the team has developed a number of basic sprite routines with different qualities. Some can handle large detail but are slow, others are fast but won't look good with big graphics – it's a trade off Which to use is an early decision in each new game conversion

The comparison between the Spectrum and the Commodore as games machines is a difficult one The machines – using different processors – have different strengths and weaknesses It's commonly thought that fast scrolling and extensive animation ought to be easier on the Spectrum using the simple equation that a Z80 is faster than a 6502 Not so says Ian

"It totally depends on the actual thing you want to do, the reason the Z80 is sometimes faster is that it has some considerably more complex instructions, on the other hand the 6502 has lots of very simple instructions – it actually gives you more options in some respects "

Equally, the C64 has sprites built in, the Spectrum not and the colour options on the latter are more limited When doing conversions you have to make the most of the good features of the machine you are converting on to – sometimes involving subtle modifications of the program play

I asked Ian to summarise the differences between the two versions of *Beach-Head* "I don't think the gameplay is that much different; on the Spectrum, the approach of the beach phase is slower because of the way the graphics have to be constantly reprinted On the other hand, the plane section seems to play better but ..." He paused momentarily ' Actually, you know, I can't stand either version anymore – I've seen far too much of them."

The Spectrum *Beach-Head* was well received and gave the team more clout. What this meant in practical terms was more money for the next projects At this point I wondered how the tricky subject of payments is agreed The explanation is simple but astonishingly haphazard

"We estimate how long it'll take us and suggest a figure, the company suggests a lower one and we agree in the middle I sometimes think what we get is totally dependent on our first bid. '

The actual sums involved are obviously secret, but a typical payment might be between £6,000 and £8,000 This is split between David and Ian and they pay Robin a fee for his work on the music as a sub-contractor The taxman gets a big chunk of the rest

The next project was *Lode Runner* for Software Projects – it was visually a very simple game, but had its own set of programming problems "There was quite a lot of machine intelligence in that game – the movement of the guards, for example, and when they would chase

you – that kind of thing takes time "

David and Ian then converted *Zaxxon* – one of the most popular programs ever and long-awaited on the Spectrum. The end result was generally considered to be disappointing. "We warned US Gold that it wouldn't work and the Spectrum wouldn't be able to handle the 45 degree scrolling properly with decent large graphics but they wanted us to do it. We too were disappointed with the program, although I think we did the best job we could."

Raid Over Moscow came next and it was another well received conversion. "It proved relatively simple to do. Some sections of the game took under a week, although we spent a lot of time on others. The bombing of the Kremlin, the high spot of the game, needed a lot of individually good graphics, for example."

David tends to work more on graphics in the games and has his own modified version of *Melbourne Draw*. Said Ian, "It's basically the same program, but he's added his own routines and modified it in other ways – we can check what animation sequences will look like before they are actually coded into the game."

The team doesn't use any special equipment. "We work on the Spectrum itself, the only other gear is two printers and lots and lots of paper."

Recent projects have included *Baseball* for Imagine (the relaunched company which is actually part of Ocean). "The problem there was with the computer intelligence for the play. We got a lot of relevant experience from doing *Lode Runner* – the techniques proved surprisingly similar."

More recently there was *Tapper*. "With that game we had to produce 20 large sprites and animate them smoothly, so some new sprite routines had to be developed." There's no shortage of work, either – the Spectrum version of *Dambusters*, the recent US Gold blockbuster, is already well under way and is posing some complex problems.

"The graphics aren't that much of a problem, despite being impressive, but the program is really a sophisticated flight simulator rather than an arcade game – as such it needs a lot of internal logic to make the plane 'handle' correctly. There is also genuine 3D in it rather than merely updating with bigger and bigger sprites – that means a lot of tricky mathematics."

They have high hopes for the game, though, despite the tremendous difficulties. "I think we might make it a better game. Whereas the Commodore version is a flight simulator with arcade elements, I think what we'll have is an arcade game which is also an authentic flight simulator."

The game should be ready about now and will have taken ten weeks. "It's been very intensive and we've been working morning, noon and night on it."

The other big project due to start more or less when *Dambusters* finishes is a conversion of the Commodore *Basketball* game for Elite who have got the Spectrum rights.

After *Basketball* things look less certain, mainly because David and Ian have had enough, for a while anyway. "Programming isn't so fresh and new anymore and it isn't quite as interesting as it used to be – it can get a bit routine."

What there is to life beyond quite a lot of money and shiny new cars is university. "We missed the opportunity to go last year and pretty soon we'll be too late for this year – they'll get fed up with us putting it off if we're not careful. Anyway this work isn't by any means guaranteed – this isn't a very secure industry, you know."



Cooped up

Program *Chicken Chase* **Price** £2.50 **Micro** Commodore 64 **Supplier** Firebird Software, Wellington House, Upper St Martin's Lane, London WC2H 8DL

What kind of mind is it that thinks up plot lines like this?

You take the role of a cockerel who has to protect his chicken coop from various evil predators – rats, snakes, stoats and so on. Every so often you must disappear to visit Mrs Hen. On returning, your strength is considerably reduced (depending on how long you spend in there) and you have to eat some of the seed which is scattered around the coop. After this visit, Mrs Hen appears and proceeds to lay an appropriate number of eggs, and then returns to safety. You must protect these eggs, until they hatch, from all the nasty animals that surround the coop. If you fail in any of these duties Mrs Hen reappears and bashes you on the head with a rolling pin.

Appalling.

Tom Hussey

Baby talk

Program *Turntaking* **Price** £5.95 **Micro** Spectrum 48K **Supplier** The Learning Process, 38 Homedale House, 3 Brunswick Road, Sutton Surrey SM1 4DG

You can tell you're getting older when the computer users seem to get younger. Here's something unique – an educational tape for babies. No reading is necessary: it all works on single key presses, or even multiple key thumps when little hands prove imprecise, and it's admirably idiot proofed – sorry child proofed. It's all so well done and educationally sound (the instructions tell us so) that it makes you wonder why it stands alone in its field.

One baby of 18 months first explored the keyboard himself,' the instructions happily inform us. 'Saying "don't press" makes them try to press harder.' Anybody who finds such pre-school punishment of their Spectrum's membrane keyboard heartwarming must have more money than sense.

Though the programs doubtlessly have some value and would amuse many children £130 is a lot to pay when compared with the cost of building bricks, paints and story books. And anybody who leaves the apple of their eye alone with all wires and that interesting humming transformer must be indulging in a little post-natal family planning.

With a suitable child/micro interface such as a touch tablet, this might be worthwhile. As it is, it's just another example of that current disease, *infatuationis computeris*.

John Minson

Altered states

Program *Transmat* **Micro** Amstrad, CPC464 plus disc **Price** £7.95 **Supplier** Pride Utilities, 7 Chalton Heights Chalton, Luton, Beds

Buying a disc drive is not always a bed of roses as those with an extensive collection of software on cassette, will find out when they upgrade to disc.

Transferring commercial programs from tape to disc so they can be loaded quickly can pose more than a few problems. For a start, protected Basic programs and loaders are impossible for the inexperienced programmer to stop and list. This means they cannot be saved on to disc. Another problem is binary files which contain machine-code programs or routines which, because they are loaded high in memory are incompatible with the disc operating system.

When the Amstrad DD-1 disc interface is connected to the Amstrad CPC464, the memory pool is reduced by 1284 bytes. This space is used by the disc operating system. Some of the early software for the 464, uses machine-code that occupies all or part of this reserved area. What actually happens when you try to load code that resides high in memory is that, as soon as the incoming binary starts to overwrite this 1284 byte area, the disc operating system crashes and usually results in a system reset.

Transmat is a disc utility which gives 11 commands that make the task of tape to disc transfer literally child's play. The *Trans n Auto* command transfers *n* programs from disc to tape automatically where *n* can be any number in the range 0-255. However this command can only be used if you are sure that the program(s) will run satisfactory when loaded from the disc. The effectively rules out commercially-written software which, because it is designed to be loaded from cassette, use filenames that would cause an error when used with AmsDOS (*Run*",*Run* "!" *Run* "!*Loader*")

The *Trans n* command on the other hand is extremely clever. Not only will it transfer basic programs, machine code loaders etc, but when it comes across a binary file that would overwrite the area of memory used by the DOS, it will stop and warn you of the impending danger. You are then asked if you wish to relocate the incoming code. Responding 'Y' to the prompt will result in the machine-code being loaded into the highest 'safe' location in memory with a short relocator routine being added to the beginning of the original code. When this code is subsequently run, the lowered block of machine-code will be restored to its original position before being executed.

Another command, *Info*, reads file headers from the disc and prints to the selected output device, screen or printer file name, file type, location, length and execution address if any, for all of the files on the disc.

Some of the commands merely duplicate the commands already available from AmsDOS, such as *Dir*, *Era*, *Ren* and *CPM*, the main advantage being that they are available direct from within *Transmat* which is useful, and, in the case of *Era* and *Ren*, there is no need for the *Rsx* command prefix " ". Neither is there any need to put the filename into a string variable, just type *Era filename* or *Ren newname=oldname*.

I found the program invaluable. It performs extremely well and I have yet to come across a program that is impossible to transfer on to disc using *Transmat*. A couple of points that irritated me about the program were firstly, on loading *Transmat* the screen colours are changed to black ink on a light background, not the best choice for extended use in my opinion. And the command *CPM* allows you to boot CP/M from within *Transmat* without providing no way of reversing the process. A short *Transmat Com* supplied to allow movement between CP/M and *Transmat*, would have saved Pride the trouble of including *Ren*, *Era*, and *Dir* in to their utility.

An invaluable aid for those with newly acquired disc drives.

Geoff Baldwin

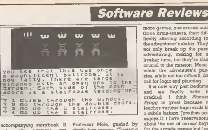
With bounce

Program *Phineas Frogg* **Price** £7.95 **Micro** Spectrum **Supplier** Mirrorsoft, Holborn Circus, London EC1

Saturday evening and I'm babysitting, the 'baby' in question being a highly active eight year old.

Tonight though I have a secret weapon, a Mirrorsoft program intended for just this age group, a junior adventure game featuring a frog who dresses like Mr Toad and comes on like Danger Mouse. Well, *Phineas Frogg* may think that the terrible hamsters are a challenge but I can guarantee a youngster's wandering attention is worse.

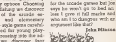
Round one, the preliminaries, consisting of reading the accompanying storybook. It not only captures my aforementioned young colleagues imagination, it arouses me too. If only all adventures were so well documented!



Round two: the program. Phineas has set off to rescue Professor Mole, guided by single key options. Choosing a spot of fishing we discover the first of the arcade sequences, and elementary *Frogger*-style game carefully balanced for young players. Progressing into the adventure we discover four more games, one arcade and three brain-teasers, their difficulty altering according to the adventurer's ability. They not only break up the pure adventuring, making for a livelier time, but they're also crucial to the mission. Meanwhile the adventure's puzzles, while not too difficult, do call for logic and planning.

It is now way past bedtime and we finally have it cracked. I think *Phineas Frogg* is great because it teaches various logic skills in a subtle fashion, Jonathan just enjoys it. I have reservations about the use of cursor keys for the arcade games but Jon says he won't go to bed unless I give it full marks and who am I to disagree with an argument like that?

John Minson



Game of games

Program *QL Chess* **Price** £19.95 **Micro** QL **Supplier** Psion/Sinclair

If you enjoy playing chess, a microcomputer can be a worthy opponent and Psion has produced for the QL what is probably the best all-around package on the market at the present time.

Assuming that the program loads without a disaster the product is excellent. The graphics are superb, offering a choice between the standard two-dimensional board with profiled pieces and a three-dimensional set-up that is probably as close to the real thing as can be done with a microcomputer screen display.

There are officially 28 levels of play but, effectively 14. The extra 14 come from an 'easy' command which tells the QL not to consider forthcoming moves while you are thinking about your next move. The highest level is 'infinite' and it takes a dedicated chess player – or someone with the patience of a statue – to use this facility for its full worth.

Level 10 is put roughly at tournament standard with the QL taking three minutes a move (averaged over 20 moves) and, at Level 11, the computer takes four minutes to make its decision. At Level 12, the degree of skill depends roughly upon you as the computer matches its average move times to yours – the longer you take the more thinking time the machine gets for itself.

Psion Chess is the current holder of the microcomputer chess championship and plays a very strong game at even low levels but, like all such machines, lacks an imagination (or a self-learning facility allowing it to improve its game) and can be caught out making silly moves that a reasonably competent human would be likely to spot. Unlike careless humans, the QL will not occasionally move a piece to where it can be taken or overlook an up-coming fork or checkmate.

The program has a number of useful options and commands. The set-up and analysis functions are very good and the take-back command is a boon to those used to the frustration of entering a key mistake on some other programs which can totally ruin a previously well thought-out game. The drawback of course is that it can encourage lazy thinking but it's preferable to losing a long game due to a simple typing error.

The Psion package plays better than chess programs costing twice the money (I challenged a boastful Commodore-user armed with *Sargon-II* to a computer match but he quickly ducked-out on the appointed day) and is well worth the expense.

Brian Beckett

Artistry

Program *Artist and Sprite Designer* **Price** £9.95 **Micro** Amstrad **Supplier** CRL Group, CRL House, 9 King's Yard, Carpenters Road, London E15 2HD

Artist and Sprite Designer is a basic graphics utility package for the Amstrad with a number of sophisticated features. Essentially it's two programs, a bog standard but perfectly usable Sprite designer and an excellent drawing program.

There are certain elements any such program must have: boxes, circles, and fill are all present but you also get a stipple and a special two colour fill.

You can also isolate a block of screen and shunt it to a new position, you can also draw an ellipse of spokes and 'wash over' over existing colours with a new one. Another function allows for other shapes like pentagons, octagons and diamonds.

The manual is small but contains enough information to get you going.

Graham Taylor

Low budget

Program *Plutonium Panic* **Price** £1.75 **Micro** Spectrum **Supplier** Highsoft, 107 Mount Road, High Barnes, Sunderland SR4 7QD

If all programs cost the same reviewing would be an easier process. Budget priced software presents the dilemma that some of the best games wouldn't look out of place at three times the cost while others are so bad they're just expensive ways to buy a data cassette.

Plutonium Panic at £1.75 including postage is cheap even by budget standards. It describes itself as an 'arcade adventure' though this is stretching a definition beyond breaking point. On the planet Pluto two pieces of a time bomb appear at random around the screen (yes, it's that good old *Rnd* command) and you (a mere cursor, but this is very cheap) have to collect them in the right order.

Next there's the find-the-number game – five attempts and it's between one and 30. After which it's shoot the descending boulders then position yourself for the descending tunnels and then. . . . it's back to the start. Zzzzzz.

Okay so this program is from a very small company, but slow Basic and an unimaginative game is only suitable for a listing, if that. The only people who might find this worthwhile are going to be very young and relatively uncritical.

John Minson

Keep track

Program *QL Bank Account* **Price** £19.95 + 50p P&P **Micro** QL **Supplier** Cenprime Software, 10 Castle St, Rugby CV21 2TP

At a very early stage in the life of any home micro comes "The home accounts" program, and this is the one for the QL.

Making full use of the pseudo-windowing of the machine, Cenprime's *QL Bank Account* is very easy to work with. Although it keeps track of up to 20 Standing Orders, posting them automatically as they become due at monthly, quarterly or annual intervals, the main feature of the program is the cheque codes. Up to 17 headings may be specified by the user, and each transaction will come under one of these codes. Thus, you may set up codes under the various headings of gas, electricity, clothes, mortgage and so on.

The real power of the program comes in being able to ask for reports on the various headings – so you can see how much you are spending in a given period on groceries, or even diamonds. All this information, as well as that on the full account, is easily printed out.

The program is very colourful and well laid-out, although I felt that more use should have been made of warning messages – which are in evidence in some parts of the program. I was disappointed that memory space vanished so quickly – the empty program shows (on the status panel) some 33K of free memory, but setting up a new file, with just a couple of entries immediately whittles this down to just 6K!

And this is very rapidly eaten up, even with my meagre account details. A bigger headache is that each cartridge may only hold one file (though lengthy files can be carried over to a second cartridge), also, I'm afraid, that the program crashed quite frequently – this is likely to be due to poor cartridges, but reinforces my personal misgivings about entrusting any important data to my QL.

Tony Bridge

History

Program *Galilee* **Price** £6.75 **Micro** Spectrum 48K **Supplier** Shards Software, Suite G, Roycraft House, 15 Linton Road, Barking, Essex

Why am I reviewing a program released some months ago? The answer lies within the accompanying PR bumf with this tape – nobody reviewed it first time round! Could it be that it's 'religious'? Shards ask. Well, it's not, they tell us: 'it is a historical (sic) adventure, using the bible as source material', though when *Pray* is synonymous with *Help* and the likely result is a chapter and verse reference to the good book, this doesn't convince.

Actually its plot is pleasingly different, with your character waking on the shores of the eponymous lake suffering from amnesia. It's the early years of Christianity and rumours of prophets and miracles abound, you'll need them to discover what your mission is. There are simple but effective illustrations, including a map that you find which has a cursor to show your position – obviously a primitive form of radar!

So are those reviewers who ignored it all the devil's servants or was their silence really an act of Christian charity? Neither, as *Galilee* isn't positively bad or good. I can't see it thrilling those who don't subscribe to its underlying faith, but born again Spectrum owners should have a ball.

John Minson

True to type

Program *The Key Factor* **Price** £8.95 **Micro** CPC 464 **Supplier** Amsoft, Brentwood House, 169 King's Road, Brentwood, Essex, CM14 4EF

The programmer of this game, Patti Aitman, may well be a name to watch in the future for he has taken an extremely simple idea and implemented it with a great deal of flair and professionalism.

The idea of the game is vaguely educational. It attempts to teach basic keyboard familiarity by use of an arcade 'invaders' program. You are given about eight missile bases each of which contain a letter or a representation of a control key such as 'CLR'. Pressing the appropriate key causes the base to fire. Meanwhile there is a sky full of antennae waving, eyeball rolling aliens dropping like rain upon you.

The result is a frantic keyboard bashing session accompanied by cries of 'where's the key with the funny squiggle thing'. It's quite good fun, and if it is in reality mindless you can at least pretend it isn't. Seriously, although it does teach you the general location of different keys, I'm not sure that you learn any precision since there is no penalty for hitting wrong ones. I tried it out on a 'real typist' and received two comments – the fact that the letters in the bases change at random is good since it forces you to watch the screen not your fingers, but she felt it was too stressful for anyone intending serious practise sessions. This didn't stop her playing for well over an hour though.

Tony Kendle


DUN
DARAGH

Real Time

Product *UMI-2B Midi Interface* **Price** £495 **Micro** BBC **Supplier** London Rock Shops, 26 Chalk Farm Rd, London NW1 (01-267 5381) and 7 Union St, Bristol (0272 276944)

With the ever-increasing interest in computers and their role in music production, it's rather surprising to find a shortage of Midi interfaces for the BBC computer. Lynton Naiff and Paul Ludgate of U-Music have set out to put that right with their *UMI-2B* (pronounced 'you-me-two-be'). It was designed by professionals for professionals: the songwriter, the jingle-writer and the multi-keyboard player. Its success has been proved by the artists who have used the system – Vince Clarke, Blancmange, Alan Parsons and, according to the PR team, Paul Hardcastle on *19*.

It's easy to see why the *UMI-2B* has attracted such performers. The interface itself has a bewildering multitude of sockets and controls: Sync to-tape in and out, Midi in, four Midi out, Clock in and out plus Start/Stop, Sync 24 (for Roland gear), Metronome audio jack out, Trigger output and Start/Stop control knob. One of those should interface with your gear – whatever you have.

The software is supplied on an Eprom. About 35000 notes can be stored in the Beeb's memory, but should you need more an alternative version is available for use with an Aries memory expansion board, which will store around 6500 notes.

Operation is largely menu driven from well-designed mode 7 screens. Notes can be entered in real time or step time. Real time note entry is perfect for writers: sequences being entered as a series of patterns. Up to four patterns can be played back together and automatically repeat to allow you to work out other lines. Patterns are chained to form complete songs which can be loaded sequentially from a separate program.

A correction option will 'tighten' your notes – sounds painful but it's not, the procedure is retrievable – so they fall on exact beats.

In step time, a number of beats per bar is selected and then a number of steps per beat. Again, notes are entered from the instrument and a display shows which notes have been pressed.

For good measure, there's also a built-in DX-7 Patch and Ram dump – think of the savings in Ram packs.

All in all, a thoroughly professional product which is reflected in the price. It retails at £495 and upgrades (the *UMI-2B* is in a continual state of development) are available for around £45.

Ian Waugh

Impressive

Product *Maxam Assembler and expansion Rom board* **Micro** CPC 464/664 **Price** £59.90 **Supplier** Arnor Ltd, PO Box 619, London, SE25 6JL

To add Roms to the Amstrad machines it is necessary to have some sort of expansion board that plugs into the disc port.

At present the market leader has to be Arnor – its Rom board is not only the first out, it also seems to be slightly cheaper than that imminent from Micropower which, so far, is the only other company to have announced details of its Rom software. For £60 Arnor gives you a very full 16K Rom, an extension board with a through port for the disc drive and a second socket capable of taking another, cheaper, Rom as a kind of cartridge.

There are really three related aspects to the *Maxam* Rom – the core is the assembler/disassembler utility but you are also given an editor and some vitally useful Rom management commands.

The full screen editor is a very useful thing to be able to call up instantly when you turn the computer on. Whilst designed to allow you to enter your assembler program, with useful default *Tab* settings etc you are also encouraged to use it for Basic or text files. It supports some quite sophisticated features such as printing a selected block, saving a block, merging a block at cursor position, etc, that go beyond the ability of the standard Basic editor, or even a utility such as *Amsword*. However, Arnor paradoxically seems to have left out one or two simple touches that make it less wonderful than it should have been.

For a start there is absolutely no limit on line length – it keeps scrolling the screen from left to right as long as you avoid pressing *Enter*. A novel idea, but not as nice as being able to set margins and have automatic word wrap.

Secondly, printing from the editor does not allow you to directly control page length, page width, etc. However, pure assembler files can be listed to the printer or screen during the coding itself. These files can have some printer control codes such as *Plen* for page length embedded in them that do not appear in the print-out. This system of course can not be used to list mixed Basic and assembler or text files because you get line after line of assembler errors thrown out. Instead you must assemble a blank file containing nothing except commands such as *Plen* 60.

The assembler is absolute magic – a fast two-pass utility with just about every feature you could ask for: conditional assembly, use of Z80 mnemonics as labels, parameter passing to Basic and so on. You are also given a disassembler that works on the normally 'hidden' computer Roms as well as Ram but will not allow you to look at *Maxam*'s own coding. Monitor facilities exist, such as the insertion of breakpoints and register display, but these seem less comprehensive – there are no options for single stepping through the code or direct manipulation of the registers.

Some compensation for this is the excellent full screen memory editor which includes the ability to search for hex or ascii strings, move and compare blocks, fill blocks with specified values and allows you to move screen memory around or edit sideways Ram if you ever have any fitted. Of course the advantages of having such things in Rom are tremendous – instant access to the assembler if your efforts cause a crash and almost no Ram lost so that full length programs can be disassembled. You can even to assemble source code held within a Basic program, as in the BBC.

The weakest point is the documentation which is adequate, but tends to be brief and obscure at points. Still, if you are sufficiently serious about assembler to appreciate the worth of this board then you can probably figure most things out for yourself, with the possible exception of why Tolkien is included in the recommended reading list.

On the whole it is a very impressive addition to the computer.

Tony Kendle

Spoken word

Hardware *Voice Master* **Price** £59.95 **Micro** Commodore 64 **Supplier** Anirog, Unit 10, Victoria Industrial Park, Dartford, Kent.

Anirog's *Voice Master* is something of a breakthrough in several fields.

Firstly, it enables Commodore 64 owners to record digital 'samples' of speech or other sounds into the memory of the computer, and play the sounds back with various modifications.

Secondly, the *Voice Master* will act as a speech recognition device, so that the computer will respond to spoken commands.

And, thirdly, the Voice Harp feature allows you to play music on the C64's SID chip by inputting a sound through the microphone, say by humming or whistling, which the *Voice Master* can interpret as a pitch command.

Voice Master comes in three parts. A headset containing a microphone on a flexible boom arm and a earpiece, the main unit, and software on disc. The unit is manufactured by Covox in the USA, and Anirog plans to distribute Apple, MSX, Amstrad and Atari versions in the autumn. The whole unit is very professionally put together, with the main circuitry housed in an aluminium case, from which leads a wire which plugs into the C64's joystick port. The headset lead plugs into sockets on the box, and the set itself sits comfortably on the head.

It's best to get an idea of what the unit can do by running the demo program. This invites you to speak into the micophone, then play back the sampled sound either as recorded, or with an 'echo' by which it repeats becoming quieter and quieter, or with a speeding up repeat which ends with your voice sounding like that of a demented chipmunk.

The quality of the sample is very good, though obviously limited by the relatively poor speakers to be found on TV sets. Try routing the signal through your hi-fi instead.

Speed and volume of playback, as well as sampling rate (and hence sound quality) are set by simple Basic commands. Voice recognition works by comparing the frequency spectrum of an input sound, with that of a sound previously stored in a 'learning' process by which the user repeats a word several times, and the program makes an 'Average' of the sound which can displayed in the form of a bar chart.

Up to 32 'templates' of this kind can be stored in the C64, making the voice recognition possibilities impressive. Control of electrical assemblies, security applications, word games – the uses are really only limited by your imagination. Since templates can be saved to cassette of disc, you don't need to re-record a whole set each time you want to use previously written programs.

The Voice Harp software enables you to choose from a number of SID chip preset sounds, then record input musical tones as conventional musical notation, in a seven-octave range with 12 interval values. Music can then be stored and replayed, edited, and printed out with a suitable printer. The only other product I know of which will do all this is the so far legendary Fairlight Voice To MIDI device, which costs umpteen thousands of pounds.

The best thing about *Voice Master* is that the voice samples it creates are transportable. If you incorporate them in a Basic program and save it, the sounds can be played back without the Voice Master fitted.

Now anyone can produce software speech to rival *Ghostbusters*, without paying more than £59.95.

Overall, an innovative and imaginative product, with which many C64 owners will want to experiment.

Chris Jenkins

Communication

Product *Nightingale/Commstar Package* **Price** £159.85 **Micro** BBC **Supplier** Pace, 92 New Cross Street, Bradford BD5 8BS (0274) 729306.

After an initial flush of over-enthusiasm, the use of home computers for communications is now being considered more seriously by many users. One of the most popular budget-priced modems available is the *Nightingale* multi-function modem produced by Pace.

The *Nightingale* offers the two standards most commonly required in the UK – 1200/75 baud viewdata, as used by Prestel, and 300/300 baud full duplex, as used by many private bulletin boards. Pace looks after the software side with their Rom-based *Commstar* program, which also concentrates on 1200/75 and 300/300. When combined together, the Pace package gives the BBC owner a quick and easy entry to phone-based communications.

Although based on a multi-mode communications chip, the *Nightingale* has been designed to be simple to use. Thus the two baud rates are selected using two push-buttons. American and other European standards are theoretically available from the electronics.

The modem can be used by any computer having an RS323 port and suitable software and Pace supplies an RS232 lead with the modem so all you need to do is specify which machine you use in order to get the correct one. Setting up and using the modem is simple, as is changing between modes.

Commstar is for the BBC only. It is a simple package which again is aimed at providing the most commonly required facilities in a form suitable for non-experts. A single-page menu shows all the facilities provided, which include setting up the communications protocols (baud rates, stop/start signals, parity, stop bits, word length, etc, all explained in the manual), switching the printer on in order to record the messages sent and received, keeping a copy of the communications in memory (or on disc) for later perusal, sending or receiving a full file (such as a program) in one block, and changing the screen display.

The manual explains each of the program facilities in an easy-to-read style which I think works quite well. If, like me, you tend to try using things after just a brief glance at the manuals you will find *Commstar* is simple enough and robust enough to let you use it straight away. Type **C** followed by *C* (for Chat) and you are straight into the correct mode for talking to most of the UK bulletin boards.

Commstar is a simple package and there are a few things which have been left out in order to keep it simple. I always look for a phone-directory which keeps a record of often-used numbers and automatically sets up the correct protocols to be used. *Commstar* provides a facility for reading in a file from disc which will set up the system as required but this is not as easy to use.

Taken together, *Commstar* and *Nightingale* offer a simple entry-level communications system. Both items have limitations but still provide 90 per cent of the facilities that are likely to be required by 90 per cent of users. I would not recommend the package to specialist users, but for the rest of us the mix of ease of use with performance is attractive.

John R Cochrane

Caterpillar Race

The Derby was never like this – try racing caterpillars on the CBM 64 – by *Tim Hodkinson*

This game is for two to five players and the idea is that each player bets on their own caterpillar in the Caterpillar Grand National. Each player starts off with £100 and has to attempt to reach a total of £500 to win. All bets are 'evens'.

When run, the program first displays the game instructions and then asks for the number of players required. On inputting the number of players, the program will then ask for each individual player's name. Once this has been done, the conditions for the first race are displayed and a tip given on who is going to win. Each caterpillar stands the best chance of winning when the conditions for the race are suited to it. The conditions for the caterpillars are as follows:

Player One's caterpillar likes dry conditions

Player Two's caterpillar likes wet conditions

Player Three's caterpillar likes frosty conditions

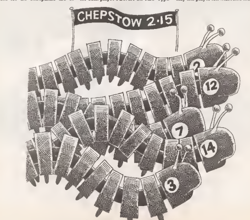
Player Four's caterpillar likes boggy conditions

Player Five's caterpillar likes parched conditions

The tipped caterpillar actually stands a better chance of winning because each time it moves, it is moved just that little bit further than the other caterpillars in the race.

When the conditions and tip have been displayed, the program then asks for each player's bet for the race. Type in the amount you wish to bet, remembering that all bets are 'evens' (ie, you win or lose as much as you betted) and that the computer will not accept bets for more money than you have. If you bet all your remaining money and lose you will be disqualified. The race will then be run and you will be able to see your caterpillar racing against its opponent(s).

At the end of each race the winner is displayed (in case of a photo finish) and the player's money is incremented/decremented as appropriate. The conditions for the next race will then be displayed and fresh bets taken. The races continue to be run until a player reaches the £500 total or until there is only one player left with some money.



```
1 PRINT"J"
1000 REM ***SET-UP SPRITES***
1010 V=53248
1030 POKE 2042,13
1040 POKE 2043,13
1050 POKE 2044,13
1060 POKE 2045,13
1070 POKE 2046,13
1080 FOR X=0 TO 62 READ Q POKE832+X,Q NEXT X
1090 DATA 0,0,6,0,0,14,0,0,0,0,0,16,0,0,16
1100 DATA 0,0,48,0,0,120,0,0,252,59,109,205
1110 DATA 110,219,207,237,183,127,255,255,143
1120 DATA 255,255,240,127,255,254,63,255,252
1130 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
1150 FOR X=0 TO 62 READ Q POKE896+X,Q NEXT X
1160 DATA 0,0,0,0,0,3,0,104,3,1,212,2,3,171,2
1170 DATA 7,247,130,15,255,199,31,255,239,63,255,
     249
1180 DAYA 127,255,217,255,3,239,254,1,224
1190 DATA 252,0,255,120,0,126,48,0,120,0,0,0
1200 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
1400 REM ***POSITION CATERPILLARS ON Y-AXIS
1410 POKE V+5,98
1420 POKE V+7,122
1430 POKE V+9,146
1440 POKE V+11,170
1450 POKE V+13,194
2000 PRINT"J"
2010 PRINTTAB(11),"CATERPILLAR RACE"
2020 PRINTTAB(11),"-----------------"
2030 PRINT
2040 PRINT"■  THE IDEA OF THE GAME IS THAT EACH"
2045 PRINT
2050 PRINT"▲  PLAYER BETS ON THEIR OWN CATERPILLAR"
2055 PRINT
2060 PRINT"■  IN THE CATERPILLAR GRAND NATIONAL."
2065 PRINT
2070 PRINT"▲  THE WINNER OF THE GAME IS THE PLAYER"
2075 PRINT
2080 PRINT"■  WHO MANAGES TO WIN A TOTAL OF £500."
2085 PRINT
2090 PRINT"▲  ALL BETS ARE 'EVENS' (I.E. YOU WIN"
2095 PRINT
2100 PRINT"■  AS MUCH OR LOSE AS MUCH AS YOU"
2105 PRINT
2110 PRINT"▲  BETTED).BETWEEN 2 AND 5 PEOPLE CAN"
2115 PRINT
2120 PRINT"■  PLAY , GOOD LUCK !!!!"
2130 PRINT PRINT"■        PRESS ANY KEY TO CONTINUE"
2140 GET K$ IFK$="" THEN 2140
2150 PRINT"J"
2160 REM ***INPUT NUMBER OF PLAYERS***
3000 INPUT "HOW MANY PLAYERS (2-5) ",N
3005 R=0
3010 IF N<2 OR N>5 THEN 3000
3020 N=INT(N)
3030 IF N<2 OR N>5 THEN 3000
3040 PRINT"J"
3050 DIM N$(5),P(5),M(5),B(5),I(5),C$(5)
3055 REM ***INPUT PLAYERS' NAMES***
3060 FOR X=1 TO N
3070 PRINT"ENTER PLAYER ",X,"'S NAME ",
3080 INPUT N$(X)
3082 IF N$(X)="" THEN 3070
3085 N$(X)=LEFT$(N$(X),6)
3086 PRINT"J"
3087 M(X)=100 REM***GIVE PLAYER HIS £100 START***
3090 NEXT X
4000 REM ***INPUT BET***
4002 GOSUB 9500 REM***CONDITIONS+TIP***
4005 GOSUB 4500
4010 FOR X=1 TO N
4015 B(X)=0
4020 PRINT "ENTER ",N$(X),"'S BET.YOU HAVE £",M(X),
4025 INPUT B(X)
4030 IF B(X)<0 OR B(X)>M(X) THEN PRINT"INVALID BET"
     GOTO4020
4035 IF B(X)<1 THEN PRINT "DON'T BE STINGY" GOTO
     4020
4040 M(X)=M(X)-B(X)
4045 PRINT"J"
4047 P(X)=40 POKE V+2+X*2,40
4050 NEXT X
4060 GOTO 5000
4490 REM ***CHECK PLAYERS' MONEY***
4500 FOR X=1 TO N
4510 IF M(X)=0 THEN GOSUB 4700
4520 NEXT X
4600 GOTO 4010
4700 PRINT N$(X)," HAS BEEN DISQUALIFIED"
4710 N$(X)=""
4720 FOR A=1 TO N
4730 IF N$(A)="" THEN N$(A)=N$(N) M(A)=M(N)
4740 NEXT A
4750 N=N-1
4800 FOR A=1 TO N
4810 PRINT N$(A),"=","PLAYER',A
4820 NEXT A
4850 IF N=1 THEN PRINT"J" PRINT,N$(1)," IS THE OVER
     -ALL WINNER' GOTO 9000
4900 RETURN
5000 REM ***RACE ROUTINE***
5005 GOSUB 8000 REM***DRAW RACE TRACK***
5010 A=RND(-TI)
5015 POKE V+21,124
5020 A=INT(RND(1)*N)+1
5040 P(A)=P(A)+I(A)
5050 IF PEEK(2041+A)=13 THEN POKE(2041+A),14 POKEV+
     40+A,5 GOTO5065
5060 IF PEEK(2041+A)=14 THEN POKE(2041+A),13 POKEV+
     40+A,13
5065 POKE V+2+A*2,P(A)
5070 IF P(A)<250 THEN 5020
5100 REM ***WINNER***
5120 PRINT"XX        ***THE WINNER IS ",N$(A),"***"
5125 GET K$ IF K$="" THEN 5125
5130 POKE V+21,0
5135 M(A)=M(A)+B(A)*2
5140 PRINT"J"
5150 IF M(A)>=500 THEN PRINT"J" PRINT,N$(A)," IS TH
     E OVER-ALL WINNER'
5160 IF M(A)>=500 THEN 9000
5390 GOTO 4000
8000 REM ***DRAW RACE TRACK***
8010 PRINT"J"
8020 PRINT"XXX-------------------------------------
     ----"
8025 PRINT
8030 FOR X=1 TO N-1
8032 PRINT"▶",X,TAB(31),"■£ £ £ £■"
8033 PRINT"----------------------------------------
     "
8035 NEXT X
8037 PRINT"▶",N,TAB(31),"■£ £ £ £■" PRINT
8040 PRINT"----------------------------------------
     "
8055 R=R+1
8060 PRINTTAB(12),"*** RACE",R,"***"
8080 PRINTCHR$(19),
8090 FOR X=1 TO 5
8100 POKE V+2+2*X,0
8110 NEXT X
8120 RETURN
9000 REM *** ANOTHER GO ? ***
9010 PRINT
9020 INPUT "WOULD YOU LIKE ANOTHER GO (Y/N) ",A$
9030 IF A$="YES" OR A$="Y" THEN RUN
9040 PRINT"J"
9050 PRINT'PROGRAM ENDED"
9500 REM ***CONDITIONS AND TIP***
9505 A=RND(-TI)
9510 A=INT(RND(1)*N)+1
9520 C$(1)="DRY"
9530 C$(2)="WET"
9540 C$(3)="FROSTY"
9550 C$(4)="BOGGY"
9560 C$(5)="PARCHED"
9570 PRINTTAB(12),"CONDITIONS=",C$(A)
9580 PRINT
9590 PRINTTAB(9),N$(A)," IS TIPPED TO WIN"
9595 PRINT
9600 FOR X=1 TO N
9610 IF X=A THEN I(X)=3+(N*.05) GOTO 9630
9620 I(X)=3
9630 NEXT X
9700 RETURN
```

Number by number

Another routine for the old Boot – a partial renumber program from ***Cy Noble***

The BBC model is the finest home computer on the market, but for some strange reason it lacks a partial renumbering command such as is found on some cheaper computers – eg, Dragon 32 and one or two others. If you are writing programs for profit or amusement this can be a nuisance, hence the following.

This machine code routine can reside at *&900* if a disc filing system is present or at *&D01* for a cassette machine. It will survive a hard break and will remain available until switch off, provided it is not overwritten. Cassette users note that *&D00* is corrupted on break hence the use of *&D01*. Alter *P%* in Line 140 accordingly to set the operating address of the machine code.

First type in the program and save it before running it in case of errors. If all appears to be OK then run the program and it will give you the option of saving the machine code produced under your choice of file name. Small changes will have to be made if you have Basic 1 because of the OSCLI and EQUS which are only available from Basic 2. Type *Report<Return>* after a hard break, and if the copyright message is 1982 or later you have Basic 2 and the program will work as it stands. If not then make the following changes:

1380 *] Rem return to Basic* **1390** *$P% = "error in line numbers"* **1400** *P% = P% + LEN($P%)* **1405** *?P% = 0 Rem terminate error message*

Delete Line 1500 and, after running the program, type * and copy the Save file <num> <num> off the screen then hit <Return>.

Once the machine code is saved then it can be **Loaded* (use the * and it will load to the original address) and will not affect any programs in normal memory until called. The way to use it is to type *L% = <line number>: N% = <new line number>: CALL &900* (or whatever address you originally assembled it at). It will renumber the program at Page from the *L%* line giving that line the *N%* new line number. This can be used to open up a handy gap in the line numbers so you can **Exec* in text files of Procedures and library programs, etc.

The program works by picking up the numbers from *&430* and *&438* where the integer variables *L%* and *N%* are stored by the operating system. The program is fully described in the listing and if you wish to save typing you can leave out all text following the '\' character on any line.

```
10REM *** RENUMBER UTILITY ***
20REM ***   BY CY NOBLE    ***
30REM ***    (c) 1985      ***
40 MODE7
50 osbyte=&FFF4
60 lpercent=&430:REM OS locations
70 npercent=&438:REM of L% and N%
80 previous=&80:current=&82
90 startline=&84:newline=&86
100 ystore=&88:flag=&89
110 difference=&8A
120:
130 FOR PASS=0TO1
140 P%=&900
150 REM Change P% to suit: see text
160 [OPT PASS+2
170 .renumber    \ debugging
180 LDA lpercent+1 \ get line numbers
190 STA startline  \ and store them
200 LDA lpercent   \ in zero page
210 STA startline+1 \ to use later as
220 LDA npercent+1 \ pointers for
230 STA newline    \ indirect addres
240 LDA npercent   \-sing. Note MSB
250 STA newline+1  \ of line number
260 SEC            \ comes first in
270 SBC startline+1 \ prog storage
280 STA difference+1 \ so calculate
290 LDA newline    \ the difference
300 SBC startline  \ and store it
310 STA difference
320 BMI jumpout    \ if negative diff
330 BNE okaynums   \ else check the
340 LDA difference+1 \ LSB in case
350 BNE okaynums   \ no difference
360 .jumpout
370 JMP badnums
380:
390 .okaynums
400 LDA #0         \ initialise a
410 STA flag       \ flag and the
420 STA current    \ variables used
430 STA previous   \ for line nums
440 LDA &18        \ get page for
450 STA current+1  \ reference
460 STA previous+1
470:
480 \ ***** MAIN LOOP *******
490:
500 .renloop
510 LDY #1          \ look for end
520 LDA (current),Y \ of program
530 CMP #&FF        \ marker byte
540 BNE rencont     \ continue if not
550 JMP oldit       \ or go to finish
560:
570 .rencont
580 BIT flag        \ flag will be
590 BMI rc1         \ +ve until we
600 CMP startline     find startline
610 BCC rc2
620:
630 INY             \ if hi byte is
640 LDA (current),Y \ equal or bigger
650 CMP startline+1 \ check lo byte
660 BCC rc2
670:
680 JSR changenum2  \ found it so we
690 JMP rc2         \ change it
700:
710 .rc1            \ now the flag is
720 JSR changenum   \ -ve we add the
730:
740 .rc2            \ difference (in
750 INX             \ changenum) each
760 LDA current+1   \ time round the
770 STA previous+1  \ loop
780 LDA current
790 STA previous
800 LDY #3
810 CLC
820 ADC (current),Y
830 STA current
840 BCC renloop
850 INC current+1
860 BCS renloop
870:
880 \ ****** SUB ROUTINES ******
890:
900 .changenum      \ here's where all
```

```
910 LDY #2            \ the work is done
920 LDA (current),Y \ after the start-
930 ADC difference+1 \ line has been
940 STA (current),Y \ found
950 DEY
960 LDA (current),Y
970 ADC difference
980 STA (current),Y
990 RTS
1000:
1010 .changenum2      \ we only use this
1020 LDY #1           \ once just to
1030 LDA newline      \ substitute the
1040 STA (current),Y \ new line number
1050 INY              \ for the old
1060 LDA newline+1
1070 STA (current),Y
1080 LDA #&FF         \ and make the
1090 STA flag         \ flag -ve so we
1100 RTS              \ cant come back
1110:
1120 \ ***** FINISH ROUTINE *****
1130:
1140.eldit
1150 LDX #0       \ osbyte with 0 in X
1160 LDY #ASC"O" \ an ASCII code in
1170 LDA #138     \ Y and number 128
1180 JSR osbyte   \ in the accumulator
1190 LDX #0       \ puts the ASCII
1200 LDY #ASC"." \ code into the key
1210 JSR osbyte   \ -board buffer
1220 LDX #0       \ 13 is the code
1230 LDY #13      \ for RETURN so we
1240 JSR osbyte   \ are doing the
1250 LDX #0       \ equivalent of
1260 LDY #ASC"L" \ OLD and LIST_ each
1270 JSR osbyte   \ followed by RETURN
1280 LDX #0       \ so you can leave
1290 LDY #ASC"." \ all of this end
1300 JSR osbyte   \ routine out if you
1310 LDX #0       \ are prepared to do
1320 LDY #13      \ it manually after
1330 JSR osbyte   \ calling 'renumber'
1340 RTS
1350 .badnums
1360 BRK \ OS routine prints string
1370 BRK \ following double brk and
1380 EQUS "Error in line numbers'
1390 BRK \ terminate error message
1400 ]:REM then returns to BASIC
1410 NEXT
1420 PRINT"L%=<line>:N%=<new line>:CALL &";~
    renumber
1430PRINT'"Save machine code ? (Y/N)"
1440*FX21,0
1450REPEAT:G$=GET$
1460UNTIL G$="Y" OR G$='N"
1470IF G$="N" END
1480 INPUT"Name for machine code file please
    "';name$
1490 file$="SAVE "+name$+" "+STR$~renumber+"
"+STR$~P%
1500OSCLI file$
1510REM oscli only available with BASIC2
1520PRINTfile$:END
```

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Upper and lower

*Sort out your cases with this compact utility for Spectrum 48K written by **Dilwyn Jones***

This article sets out to add two new string handling functions to Spectrum Basic Both routines consist of 42 bytes of relocatable microdrive compatible machine code called by means of a *Def Fn* statement as outlined by Roy Whittle in *Popular Computing Weekly* Vol 3 No 50

The first of the two routines converts a given string to lower case letters whereas the second routine converts the string to upper case Both return the number of changes made to the string, which may be a section of a string (slice) or a part of an array

These routines may be useful in database applications or menu driven programs where it is tiresome to have to check for both cases of letters.

Convert the string to upper case, for example, then it is not necessary to check for lower case letters It can also be very usefully applied to string searches Here, you may save time by only checking through *s$* for a name in upper case, for example So to preserve the original case, take a copy of the string and convert that to upper case before searching: *Let c$=a$:Let changes=Fn u (c$)*

Type in the listing of Fig 1 which creates both routines and checks if you have made a typing error The code created may then be saved as one long, combined piece of code with. *Save"fncombo" Code 65284,84* Both routines could be saved separately with *Save"fnlower" Code 65284,42* and *Save"fnupper" Code 65326,42* To reload the routines in their normal positions, use *Clear 65283:Load"fnlower" Code:Load"fnupper"Code*

Naturally, since the machine code is relocatable, you may place either, or both, routines at any address you like Thus would enable these routines to be used with other non-relocatable machine code

To use the routines, a pair of *Def Fn* statements are needed. The lower case conversion function is *Def Fn l (s$)=Usr 65284* The upper case conversion function is *Def Fn u (s$)=Usr 65326* In both cases, *s$* is the string to be converted. The address after *Usr* is the address at which you choose to place the routines. The functions are called by statements like *Let changes=FN l (a$)* or *Print Fn u (b$)*. The value returned to Basic by the functions is the number of changes made to the string, so that if two letters in a five character string were converted, two would be returned.

Fig. 2 is a short program to demonstrate the uses of the two new functions. Enter various strings, including nulls, to familiarise yourself with what both routines do. Incidentally, those of you with a Spectrum + may like to note how vulnerable an *Input Line* statement such as the one used here has become Cursor down is now a single key press so that it is very easy to crash such a statement.

Figure 1

```
 10 REM create FN l(a$) code
 20 REM Dilwyn Jones, 1985
 30 CLEAR 65283: LET checksum=0
 40 FOR a=65284 TO 65325
 50 READ value: LET checksum=ch
ecksum+value
 60 POKE a,value
 70 NEXT a: IF checksua<>4257 T
HEN PRINT "FN1 DATA error"
 80 REM data for FN l(s$)
 90 DATA 221,42,11,92,1,0,0,221
100 DATA 86,7,221,94,6,122,179
110 DATA 200,221,102,5,221,110
120 DATA 4,126,254,65,56,8,254
130 DATA 91,48,4,3,198,32,119
140 DATA 35,27,122,179,32,237
150 DATA 201
160 LET checksum=0
170 FOR a=65326 TO 65367
180 READ value: LET checksum=ch
ecksum+value
190 POKE a,value
200 NEXT a: IF checksum<>4337 T
HEN PRINT "FNu DATA error"
210 REM data for FN u(s$)
220 DATA 221,42,11,92,1,0,0,221
230 DATA 86,7,221,94,6,122,179
240 DATA 200,221,102,5,221,110
250 DATA 4,126,254,97,56,8,254
260 DATA 123,48,4,3,214,32,119
270 DATA 35,27,122,179,32,237
280 DATA 201
```

Figure 2

```
 10 DEF FN l(s$)=USR 65284
 20 DEF FN u(s$)=USR 65326
 30 INPUT LINE a$
 40 PRINT "normal=";a$
 50 PRINT "changes=";FN l(a$)
 60 PRINT "lowercase=";a$
 70 PRINT "changes=";FN u(a$)
 80 PRINT "uppercase=";a$
 90 PRINT
100 GO TO 30
```


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A brief message

Printer initialisation (part one) made easy on the QL with this utility from **Dr R K Lowry**

Modern printers can do an awful lot. The problem is that getting them to do it requires a lot of ferreting around in manuals, control codes, and four-letter words. This program allows the setting of print mode (typeface, etc), line spacing, page format (tabs margins, page-length, etc) and character set via a set of menus driven where possible by a single key press.

The program was set up specifically for the Canon PW-1080A but I believe that the Taxan/Kaga is virtually identical and that there are a lot of similarities with the later Epson printers. All that should be required to adapt it to your printer are changes to the control codes and a few deletions here and there where features unique to the Canon are set up.

There are a couple of general purpose functions used which I find quite useful. Function *Fkey* converts a function keypress into the equivalent integer (F1=1 etc) with an input mask which allows a subset of the function keys to be selected. The value of the mask is computed by summing the *Keyrow* column values for the required keys. Function *Intread* reads an integer number from the keyboard issuing a recoverable error message if the input value is outside the range specified by the function arguments. The method used only reads the keys 0-9 and *Enter* so that annoying program crashes resulting from non-numeric characters are eliminated. Unlike *Input*, the function does not allow mistyped digits to be corrected by backspacing. However, in this application any errors which do occur can be so easily corrected by recycling through the menus (or deliberately forcing the internal error) that the additional code required to allow backspacing was not deemed necessary.

The remainder of the listing will be printed next week.

```
100 REMark **
110 REMark ** Printer initialisation
120 REMark ** (C) R K  Lowry 1985
130 REMark **
140 REMark ** Designed for the Canon PW-1080A
150 REMark **
160 REMark ** Set windows to TV defaults
170 REMark ** Open printer channel
180 REMark ** Reset printer to defaults
190 REMark **
200 MODE 8
210 WINDOW#1,448,200,32,16
220 WINDOW#0,448,50,32,216
230 OPEN#3 ser1
240 ntab = 9
250 PRINT#3 CHR$(27);"@";
260 REMark **
270 REMark ** Initial menu
280 REMark **
290 REPeat main_menu
300 PAPER 1:STRIP 0:CLS:CLS#0:row=6:col=8
310 AT row,col:PRINT FILL$("*",29):row=row+1
320 AT row,col:PRINT"  F1 - Select print mode      ";row=row+1
330 AT row,col:PRINT"  F2 - Select line spacing    ";row=row+1
340 AT row,col:PRINT"  F3 - Select page format     ";row=row+1
350 AT row,col:PRINT"  F4 - Select character set   ";row=row+1
360 AT row,col:PRINT"  F5 - Leave program          ";row=row+1
370 AT row,col:PRINT FILL$("*",29)
380 REMark **
390 REMark ** Read function key
400 REMark **
410 key_press=fkey(59)
420 REMark **
430 REMark ** Branch to appropriate procedure
440 REMark **
450 SELect ON key_press
460 =1
470 typeface
480 =2
490 line_space
500 =3
510 page_format
520 =4
530 character_set
540 =5
550 EXIT main_menu
560 END SELect
570 END REPeat main_menu
580 REMark **
590 REMark ** Offer test print
600 REMark **
610 CLS:AT 8,8:PRINT" Do you require a test print? "
620 IF yesno$=="y" THEN
630 PRINT#3,"TEST CHARACTERS";CHR$(10)
640 FOR i=33 TO 125
650 PRINT#3 CHR$(i);
660 NEXT i
670 PRINT#3 CHR$(10);CHR$(10);"TAB STOPS";CHR$(10)
680 FOR i=1 TO ntab
690 PRINT#3,CHR$(9);"T";
700 NEXT i
710 PRINT#3,CHR$(12);
720 END IF
730 CLOSE#3
740 STOP
750 REMark **
760 REMark ** Function FKEY
770 REMark ** Read function key
780 REMark **
790 DEFine FuNction fkey(mask%)
800 LOCal kn%
810 REPeat read_key
820 kn% = KEYROW(0)&&mask%
830 IF kn%<>0 THEN EXIT read_key
840 END REPeat read_key
850 IF kn%=2 THEN RETurn 1
860 IF kn%=8 THEN RETurn 2
870 IF kn%=16 THEN RETurn 3
880 IF kn%=32 THEN RETurn 5
890 RETurn 0
900 END DEFine
910 REMark **
920 REMark ** Function yesno$
930 REMark ** Return answer from y/n type question
940 REMark **
950 DEFine FuNction yesno$
960 LOCal key$
970 REPeat read_key
980 key$=INKEY$(-1)
990 IF key$=="y" OR key$=="n" THEN EXIT read_key
1000 END REPeat read_key
1010 RETurn key$
1020 END DEFine
1030 REMark **
1040 REMark ** Procedure typeface
1050 REMark ** Selection of typeface
1060 REMark **
1070 DEFine PROCedure typeface
1080 LOCal mask%,key_press
1090 REMark **
1100 REMark ** Offer 1st menu
1110 REMark **
1120 CLS:row=7:col=8
1130 AT row,col:PRINT FILL$("*",28):row=row+1
1140 AT row,col:PRINT "  F1 - Standard typeface  ";row=row+1
1150 AT row,col:PRINT "  F2 - Elite typeface     ";row=row+1
1160 AT row,col:PRINT "  F3 - NLQ typeface       ";row=row+1
1170 AT row,col:PRINT "  F4 - Emphasised type    ";row=row+1
1180 AT row,col:PRINT "  F5 - Condensed type     ";row=row+1
1190 AT row,col:PRINT FILL$("*",28)
1200 key_press=fkey(59)
1210 SELect ON key_press
1220 =1
1230 PRINT#3 CHR$(27);"P";
1240 mask%=59
1250 =2
1260 PRINT#3,CHR$(27);"M";
1270 mask%=28
1280 =3
1290 PRINT#3 CHR$(27);"(";
1300 =4
1310 PRINT#3,CHR$(27);"E";
1320 =5
1330 PRINT#3,CHR$(27);CHR$(15);
1340 END SELect
1350 IF key_press=1 OR key_press=5 THEN
1360 CLS:AT 8,11:PRINT"Double strike?"
1370 IF yesno$=="y" THEN PRINT#3,CHR$(27);"G";
1380 END IF
1390 IF key_press=1 OR key_press=3 THEN
1400 CLS:AT 8,8:PRINT"Proportional spacing?"
1410 IF yesno$=="y" THEN PRINT#3,CHR$(27);"p1";
1420 END IF
1430 IF key_press<5 THEN
1440 CLS:AT 8,8:PRINT"Enlarged characters?"
1450 IF yesno$=="y" THEN PRINT#3,CHR$(27);"W1";
1460 END IF
1470 END DEFine
1480 REMark **
1490 REMark ** Procedure character_set
1500 REMark ** Allows selection of one of the
1510 REMark ** International character sets and
1520 REMark ** selection of italic characters
1540 DEFine PROCedure character_set
1550 LOCal letval
1560 CLS:row=5:col=8
1570 AT row,col:PRINT FILL$("*",29):row=row+1
1580 AT row,col:PRINT"     Press digit to select     ";row=row+1
```



Sound advice

Design your own sounds on the Amstrad machines with this program from ***John Durst***

One of the most ambitioce features of the Amstrad machines is the system which produces computer music With up to three channels on the go, along with volume envelopes and tonal modulation, it can produce quite impressive Victory fanfares and the like. But the cost in human wear and tear is appaling; people have been found running through the snowy streets in their underwear, scattering handfuls of graphs and data lists Before things get hopelessly out of hand, something must be done to reduce the drudgery And here, for a start, is a Basic program which can help

The two features which most affect the quality of a musical note (in Amstrad terms) are the Volume Envelope and the Tone Envelope The first allows you to sculpture the loudness of the note, the second modifies the frequency of the note, with much the same effect as the way a violinist waggles his finger on the string to give an added richness to the note he is playing

Both these features can be coded, using the *Env* function (for Envelope Volume) and the *Enc* function (Envelope Tone) These two functions are programmed in Basic as Data lists, which can be read off by the *Sound* command. They have to be entered as lists of figures, which must be calculated in advance – usually from graphic sketches of the shapes of envelope required

Now, graphics and calculations are two things computers are very good at, so why not get the Amstrad to take the sweat out of coding the envelopes?

The program here lets you draw the outline of the envelope you are planning, on the TV screen As described in the User Instructions (Ch6, p8), the envelope has to be made up of straight-line sections, in this program, you hit the *Enter* key at the end of each section you have drawn and the computer calculates and stores the appropriate values (and prints them out) When you have designed your envelope you hit the Numeric Pad *Enter* and the whole thing is converted into an *Env* (or *Ent*) function and the musical note is played You can then go on to design another one and see how that works

There is room for up to 15 of each kind of Envelope (stored in two arrays) and, obviously, these can be *Saved* and used later in your own programs

Program Notes

1-100 Lets you choose whether you want to design for *Env* or *Ent*. They also set up the arrays (Line 5), "ev", for Volume, "et" for Tone, and "en" as a working array in which to hold the values you enter

180 Sends you to a subroutine which draws the graph paper It comes up in dark blue and light blue squares with whitish lines and a general black background.

170-350 Does the actual drawing of the graphs in 4-pixel horizontal, or vertical steps These are controlled by the cursor pad. If you make a mistake, you can rub out (more or less) the lines you have drawn by keying *Copy* – and then going back over the steps you have taken. *Copy* again will put you back on visible graphic lines. Don't expect too much of the corrections, though. if you make a real hash, it is better to start again.

340 Prints your vertical position relative to the baseline, to help you to get back to 0 at the end of your envelope When you have completed each stepped section, key (Numeric) *Enter* for the next phase

360-470 This section does the calculations to get the figures for *Env* or *Ent* luckily they both take the same form.

380 First, this line sorts out whether there is a matching number of vertical and horizontal entries. If there has been a mistake, it will signal, 'Unmatched number of steps', and you have to look at the drawing and decide whether there should be one more vertical, or one more horizontal entry If all is well, the calculations are made and the three parameters printed out You then get a chance to enter another section – up to five

490-630 Finally this section enters the figures in the "ev" or "et" arrays and plays you the result. By the way, it will play the envelope you have just designed, accompanied by the last one it finds, in the array holding the alternative function. *Enter* starts you off on a new envelope, any other key plays the note again.

A program of this kind relies heavily on single, plus or minus increments. You are dealing all the time with the three numbers – 1, 0 and 1 Hence the rash of flags, "Sgn" and 'Abs'. Basic is very cumbersome when coping with this, look at Lines 330/340, for instance This is a case when machine code would be both neater and easier to understand However, the whole thing seems to work – and it really does help to take some of the headache out of Amstrad music

```
1 ON ERROR GOTO 2000
5 DIM en(15):DIM ev(15,15):DIM et(15,15)
10 a=1:ch=0:PRINT CHR$(23);CHR$(0)
20 CLS:BORDER 0:INK 0,0:INK 1,21:INK 2,2:INK 3,1
30 PRINT "ENV or ENT (Input ";CHR$(34);"V";CHR$(34);" o
r ";CHR$(34);"T";CHR$(34);")"
40 IF INKEY(55) AND 32<>0 AND INKEY(51) AND 32<>0 THEN
GOTO 40
50 iky=INKEY(55)
60  FOR j=1 TO 15:IF ev(j,1)<>0 THEN NEXT
70 j1=j
80  FOR j=1 TO 15:IF et(j,1)<>0 THEN NEXT
90 j2=j
100 CLS
110 LOCATE 1,1
120 IF iky>=0 THEN PRINT"Volume Envelope No:";j1:GOTO 1
40
130 PRINT"Tone Envelope No:";j2
140 PRINT "Use ";CHR$(34);"ENTER";CHR$(34);" TO encode
a section"
150 PRINT "Number-pad ";CHR$(34);"ENTER";CHR$(34);" end
s current envelope"
160 GOSUB 3000
170 ERASE en:DIM en(15)
180 PLOT 0,240,1
190 x1=0:y1=0
200 sflg=1:hflag=0:vflag=0
210 x=0:y=0:h=0:v=0
220 LOCATE 1,19:PRINT"Use cursor keys to draw envelope
shape"
230 DRAWR 4*x,4*y
240 LOCATE 35,5:PRINT(YPOS-240)/4
250 z$=INKEY$:IF z$="" THEN 250
260 IF INKEY(9)=0 THEN ch=ch XOR 1:PRINT CHR$(23);CHR$(
ch):LOCATE 1,18:IF ch=1 THEN PRINT"ERASING" ELSE PRINT"
```

```
265 PRINT CHR$(23);CHR$(c)
270 IF INKEY(18)=0 THEN 360
280 IF INKEY(6)=0 THEN 400
290 x=0:y=0
300 x=(INKEY(1)=0)*(XPOS<635)-(INKEY(8)=0)*(XPOS>0)
310 y=(INKEY(0)=0)*(YPOS<392)-(INKEY(2)=0)*(YPOS>128)
320 x1=x1+x:y1=y1+y
330 IF x<>0 THEN hflag=1:IF vflag=1 THEN vflag=0:h=h+x-
stflg*x:stflg=0
340 IF y<>0 THEN vflag=1:IF hflag=1 THEN hflag=0:v=v+y-
stflg*y:stflg=0
350 GOTO 290
360 IF ABS(h)<>ABS(v) THEN LOCATE 1,20:PRINT"Unmatched
number of steps":GOTO 250
370 v=v+SGN(v):h=h+SGN(h)
380 IF h=0 THEN h=1
390 LOCATE 1,20:PRINT SPACE$(39)
400 PRINT"Step count:":PRINT"Step size :":PRINT"Pause t
ime:"
410 en(a)=h:LOCATE 11+a,21:PRINT h
420 IF v=0 THEN en(a+1)=0:GOTO 440
430 en(a+1)=SGN(v)*ROUND(y1/v)
440 LOCATE 11+a,22:PRINT en(a+1)
450 en(a+2)=ROUND(x1/h)
460 LOCATE 11+a,23:PRINT en(a+2)
470 a=a+3:IF a<15 THEN 190 ELSE 480
480 REM ENCODE ENV
490 IF iky<0 THEN GOTO 550
500 FOR j=1 TO 15:ev(j1,j)=en(j):NEXT
510 ENV j1,ev(j1,1),ev(j1,2),ev(j1,3),ev(j1,4),ev(j1,5)
,ev(j1,6),ev(j1,7),ev(j1,8),ev(j1,9),ev(j1,10),ev(j1,11
),ev(j1,12),ev(j1,13),ev(j1,14),ev(j1,15)
520 IF j2>1 THEN j2=j2-1
530 GOTO 540
540 STOP
550 REM ENCODE ENT
560 FOR j=1 TO 15:et(j2,j)=en(j):NEXT
570 ENT -j2,et(j2,1),et(j2,2),et(j2,3),et(j2,4),et(j2,5
),et(j2,6),et(j2,7),et(j2,8),et(j2,9),et(j2,10),et(j2,1
1),et(j2,12),et(j2,13),et(j2,14),et(j2,15)
580 IF j1>1 THEN j1=j1-1
590 SOUND 129,478,0,0,j1,j2
600 LOCATE 1,25
610 PRINT CHR$(34);"ENTER";CHR$(34);" selects a new env
elope";CHR$(22)+CHR$(0)
620 IF INKEY$="" THEN GOTO 620
630 IF INKEY(18)<>-1 THEN GOTO 10 ELSE 590
1000 REM chequers
1010 c1=0:c2=0
1020 LOCATE 1,4
1030 FOR i=1 TO 7
1040 FOR j=1 TO 10
1050 PAPER 2:PRINT" ";:PAPER 3:PRINT" ";: PAPER 2:PRINT
" ";:PAPER 3:PRINT" ";
1060 NEXT
1070 FOR j=1 TO 10
1080 PAPER 3:PRINT" ";:PAPER 2:PRINT" ";: PAPER 3:PRINT
" ";:PAPER 2:PRINT" ";
1090 NEXT:NEXT i
1100 PLOT 0,240:DRAW 639,240
1110 PAPER 0
1120 RETURN
2000 IF ERR=10 THEN GOTO 10
5000 FOR j=0 TO 15
5010 PRINT en(j),
5020 PRINT ev(j1,j),
5030 PRINT et(j2,j)
5040 NEXT
```

BBC tips

To continue from last week's 'firsts', here are some tips from Simon Cleland for Mikro-Gen's *Wally*. "Wilma puts R in the safe, Tom puts R, Dick puts E, Harry puts A, Wally puts K. To mend the hook and obtain the letter E use Wally to collect the hook and superglue and go to the workshed – the hook will now be mended. Take Wilma with the parcel and the rubber stamp to the post office and go to the far end, the parcel will now be stamped. Take the parcel to the docks and walk over the letter E and you will pick it up."

This tip for the same game arrived on a small printout that has been separated from its original letter – anyone recognise it? "To mend the fountain start off with Dick, get the post office to get the plunger, go to the baker's and get the monkey nuts. Go to the zoo and get the monkey wrench and with both tools jump up and the fountain will be fixed."

Paul Bevan of Prinsa wants to know if he was the first to have finished *Rocky Horror Show* by CRL back on 11th May with five seconds to spare. He would also like pokes for *Airwolf*.

M Mallett writes about *Castle Quest* for the BBC. "Micropower's challenge was 'Bet you £1 you can't crack it' – suffice to say that we didn't need the three month time limit, since my brother and I finished it in five days. The MP4 Scrollerama is quite good, but not the brilliant innovation they claim. The playing area is disappointingly small and I find it hard to believe it couldn't be bigger. However, the puzzles involved in solving it are very good. It is a true arcade adventure in this respect, more so than *Knight Lore*. But at £14 for the disc version, it is very overpriced. The biggest disappointment is that when one has finished nothing happens except that the score goes up."

Staying with the same game, Tom Barker of Coventry has some tips. "To get past the spiders, get the torch and guide the monkeys past the bottom ladders over to the spiders, staying behind them. The monkeys will eat the spiders but not you. To get the ruby, collect the sword from the spiders and kill the guards by fighting them. Don't fight two at once. Do the same to the squalung from under the dungeon. To kill the witch, fill the bucket with water, get the witch to follow you down the narrow passage and throw the water at her. Does anyone know what to do with the wand?

"To cheat on *Orpheus* by A'n'F load *'Orph2'* and list line 70. Where it says *'SV%=0'* change the 0 to the screen number you want to start on. For a million lives put *I%=1to-1000000 step-1*. For infinite lives change a=1 in line 130 to a=0. Does anyone know pokes for the BBC *Manic Miner*. My high scores are *Killer Gorilla* 99,000, *Chuckie Egg* 272,000, *Castle Quest* 60, *Jetpac* 36,000, *Sabre Wulf* 80,000 & 82%, *Challenger* 115,000, *Elite* Competent 80,000 credits, *Micro Olympics* 2.4m high jump 96m javelin, *Cybertron Mission* 220,000, *Crazy Painter* 47,000."

I must say how pleased I am that some BBC owners are starting to loosen up and write to the Avenue – I hope we get many more. To encourage you here are some more, gratefully received tips from D Bonehill of Redditch. "For each of these games I have given the memory address that controls lives and start level respectively – *Arcadians* &4EBE, &4EC8, *Cybertron Mission* &1A06, &1A18 *Planetoid* &276B, &2771, *Snapper* &FDD, &FCD, *Meteors* &1711, &170C, *Monsters* &1FO4, unknown, *Chuckie Egg* &2BFD, &2BF9, *Killer Gorilla* &1138, &113C. To use these you must write a small program to be loaded before the main program, eg. *Chuckie Egg*. 10 *Page = &6000* 20 *?&2BFD=(no of lives)* 30 *?&2BF9=(level)* 40 **LOAD ""* 50 *Call (start address)*

The start address can be found using **INFO* on disc or **OPT1 2* on tape."

We also had a reasonable number of letters from Dragon owners, all of whom made a case for why they should be given the free copy of *Backtrack*. However, the winner who was the first to send us four pokes was Darryl Gove of Sunbury-on-Thames. His pokes were printed in our arcade special issue. Here also are some Dragon high scores from Laurence Moran of Dublin – *The King* 1,000,700, *Manic Miner* 19,440, *Ghost Attack* 93,315. Laurence also needs help on screen three of *Jack and the Beanstalk*.

A Mr Buxton of Muswell Hill is stuck getting on to level three on Hewson's excellent *Dragontorc* so I'm sure he will be glad to see this message from Andrew Hewson, giving the solutions to the most common problems.

"WISPWOOD – Read the cassette inlay for clues. Make sure you pick up Merlyn's Seal, you will need it many times. It helps you find the exit to the woods hidden beneath one of the two slabs lying in a forest clearing. Use the seal and the slab and the slab moves to show a trap door. Take the spell hidden here and move Maroc on to it to move down to the lost vaults.

"VAULTS – Don't waste time searching here for the key for the locked door, you have to go to the sanctuary of Helgor and then to Witchwood to find this Sunkey. To leave the vaults collect three runes – 'X' 'I' and 'T'. The first is buried with the teapot and other rubbish in the room adjacent to the vaults. To get the second, find the three rooms next to each other that each have a chest in. Open the first chest, take the key and unlock the other two, but beware of spiders. Take the key from the final chest and go to the room with a fireball in it. Touch the stool here with the servant and it will turn into a chest with the rune in it. The third is buried in a skeleton.

"Take all three to the room with an 'E' rune on the floor and drop them to spell EXIT. A ley cube will appear which will take you back to the stone circle in Wispwood. Before you go, there are a couple of spells and things to be collected including a heal spell (got by taking water from the pool to the pedestal fountain). Once in Wispwood strike one of the standing stones with the ley rod and a ley cube appears to take you to Webwood. Use the missile spell to attack the spiders.

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Here's how it works

Study the table below and look at the column for the machine you have – these are the games you'll need to master. Send your high scores in on the form below, making sure that your scores are authenticated by a responsible individual signing the form. Any score achieved using technical short-cuts – such as infinite lives Pokes – will not be accepted.

Between now and September Tony Kendle will be keeping you up to date on the *Arcade Avenue* page with just who and the scores to beat. Then, in September the top three scorers on each machine will battle it out for a place in the final and the chance to be the first to play our top secret games.

	Commodore	BBC	Spectrum	Amstrad
Game 1	Lucida Express	Elite	Technician Ted	Sorcery
Game 2	Beach Head	Jet Pac	3D Ion Strike	Splat!
Game 3	Shoot the Rapids	Chuckie Egg	Cyclone	Manic Miner

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Tony Bridge's Adventure Corner



Power of Pictures

Just about the most well-used buzzword of this year has been the *icons* – used to refer to on-screen pictures or symbols that, when selected by the cursor, cause a certain function to be performed by the computer

The technique has been used in many programs, and has been adopted by Apple as a complete operating system, as seen on the Macintosh It seems to be a natural for business programs, freeing the operator from the tyranny of all those obscure messages and allowing full communication with the machine. It's been a great success in the business world, but how about using them in games?

Arcade games are not an obvious candidate, as speed is of the essence, and dragging a cursor around the screen would slow down the action too much. But adventure games would seem to be an ideal environment in which to use icons This leads us to *Shadowfire* This is the icon-driven adventure from Beyond, who claim its the first true adventure without text I think that this is stretching the truth somewhat, as *Shadowfire* is actually the distant cousin of a family which has many members in the States, and one or two on this side of the Atlantic.

I wouldn't call *Shadowfire* an adventure so much as a strategy game, and in this regard its beginnings can be seen in an American game that springs immediately to my mind From Spinnaker Software *In Search of the Most Amazing Thing*, is an 'adventure' game for younger players, though the strategy elements of the game make it attractive to older players With no text input, the program requires the player to initiate commands via the joystick. I suppose that this is a sophisticated form of the 'a, b or c' multiple choice quiz And *Shadowfire* is an *extremely* sophisticated etc There are, of course, many more games of this type One example is *Raiders* from Red Shift This was a two-player game, which may account for the fact, that it never gained the popularity that it deserved (two-player never seem to sell well) But in many ways it was similar to *Shadowfire*, the scenario concerning the assault of a a party of characters on a central organism/computer, Main-Comp No text input was required, the characters being controlled by the joystick *Rebelstar* however, was very much more of a tactical wargame than *Shadowfire*.

Those who have already bought *Shadowfire* – and the game is apparently doing very well – may be interested to know that Beyond plans the *Shadowfire designer* program which will soon be available to allow you to customise the main program Not only that but the sequel is already on the drawing board.

Other software houses will, of course, be frantically producing their own icon-driven games and in fact *Shadowfire* has only narrowly beaten another excellent game – *The Fourth Protocol* – to the marketplace It may be based on the rather dreary book of the same title by Frederick Forsyth, but the game – which I saw a pre-release version of for the Commodore is very enjoyable

Back to *Shadowfire* now, and mention of some letters that I've received. Harry Wright's letter is typical of every letter I've had on the subject "Again, Beyond have produced an excellent game with many novel features" Steve Ford says "It really is a magnificent program, but the big let-down is when you finish Just one word, 'Succeeded!' "

Because of the game's structure it is not easy to give cut-and-dried solutions to certain situations in Shadowfire however, there are strategies that you can employ to help you enjoy the game, and my thanks are due to the readers who have written to me with detailed information.

It's a good idea to proceed around Zoff V in an anti-clockwise direction with the occasional foray into the centre, although a more cogent attack plan is necessary in the game proper Once you have got a good map you can start to get into combat, and here it seems obvious that you must rest your characters as much as possible, and certainly after a heavy bit of fighting While actually fighting, try to switch from heavy weapons to lighter weapons once the enemy has been softened up a bit To finish the game successfully, you must destroy every enemy unit, so don't waste time running away! A good way of moving the party is by sending the slower characters ahead of the faster ones (or keep the slower ones in reserve back on board the Enigma) While they are together they will rarely if ever be defeated, though it may be a good idea to beam the party back to the Enigma if they show serious signs of weakening Once rested, send them back and you'll find that the enemy have not recovered strength. And while on the subject of weapons, be sure to equip your characters properly at the start of the game and make sure that their weapons are ready for use Get Manot to transport someone to the Fighter Bay Exactly who to beam down is up to you – at first, it's probably best to get all the characters on board Zoff V, leaving one Teleport on Enigma and the other with Manto But another scenario could be to send Manto alone, carrying the Teleport When he comes under attack, drop the Teleport and beam down the rest of the party, returning them to the Enigma craft once the enemy is vanquished. This way, the main body of the party will always be rested when needed, and Manto can be rested occasionally

Don't bother about the Self-Destruct card, as the game will not be won by destroying the Zoff V but the key cards are much faster at opening doors than is Sevrina Incidentally, Sevrina has to be protected along with Manto as the game is lost without them – but you may find that other characters have to be sacrificed along the way, particularly when rescuing the Ambassador Dryxix, who is surrounded by a heavy guard the rescue is best accomplished by dropping the Teleport near him and then activating it To capture Zoff, a similar strategy has to be employed, but he is a slippery customer and will try to escape if given the chance, so timing is of the essence here

The series of articles is designed for novice and experienced Adventurers alike Each week Tony Bridge will be looking at different Adventures and advising you on some of the problems and pitfalls you can expect to encounter So if you have an Adventure you want reviewed, or if you are stuck in an Adventure you cannot progress any further write to Tony Bridge Adventure Corner *Popular Computing Weekly* 12 13 Little Newport Street, London WC2H 3LD

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Peek & Poke



Disabled Screen

A J B of Crowborough, East Sussex, writes

Q Please can you help me? I have a CBM 64 and I've been trying for months to find the right selection of *Pokes* to disable the blank screen while loading.

A Locations 53265 and 53266 control the screen blanking setting these addresses using *Poke* 53266, *Peek* (53265) *And* 239, effectively blanks out the screen (although no data is lost). Using *Poke* 53265, *Peek* (53265) *Or* 16, puts everything back as it was before.

In order to stop *Load* from blanking out the screen, it will be necessary for you to write your own loader. The standard CBM 64 *Load* command blanks out the screen, in order to make the loading process faster. You will need to write a machine code routine that carries out the same functions as *Load* except of course for the screen blanking operation.

Clear memory

T Mathews of Poole, Dorset, writes

Q How can I stop Basic programs from being listed on my Oric-1?

A I guess that what you are thinking of here is stopping people from breaking into your programs and then listing them. Autorunning a program is one way of making life difficult, although this of course can be circumvented by pressing *Reset*.

This problem is most simply overcome by changing the way that the machine returns to Basic when *Reset* is pressed. Bytes *H001B* and *H001C* hold the address that is to be branched to whenever a program ends. If the command *Poke#001B,#F42D* is executed this will cause a branch to the Oric's reinitialisation routine to be effected when *Reset* is pressed.

This therefore clears memory and so there is nothing left to list.

Loading trouble

C E Barker of Welwyn, Herts, writes

Q Can you please advise on the following matter? I have sold my Vic 20 and data recorder and purchased a CBM 64 and a new Commodore data recorder. I am having trouble loading (for listing purposes only) 50% of the programs I wrote on the Vic 20. These I have succeeded in loading, load at about the tenth attempt. If I then re-record them all is well thereafter. How can I load the troublesome ones? The title is always picked up, and the instruction *Play* given. The recorder then runs for the right length of time, then comes *Load Error*.

Have the recorders got heads in different positions relative to the tape? But if so, how do some programs load?

A Your problem would seem to be a mixture of two actual problems. Firstly, as you suggest, the two recorders do almost certainly differ in terms of head alignment.

Secondly, the tapes that you are attempting to read are likely to be starting to age, and that will mean that you will experience loading problems (although not necessarily complete failure).

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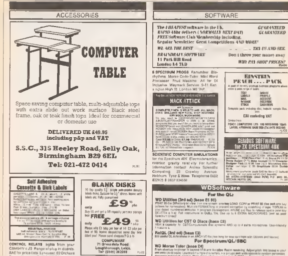
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SWAP OLIVETTI LEXICON 80 Electric typewriter for two good Commodore compatible printer Also swap Armour full-size electric piano for a 1541 disc drive Contact G Fisher 225 Valencen Wood Road Dagenham

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AMSTRAD 64 Four months old green monitor easy AMSCAK and Amsoft games pack, £300 Tel 082 826180 after 6 30pm

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JUKI 6150 daisywheel printer excellent condition £260 Morgan Tel 01-673 0263

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AMSTRAD/MICROPEN database (original disc) with manual £35 Also 'Welcome and CPC464 Computing No 1 tapes – Offers? Marc Tel 01 981 5888 any time.

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RUBBER KEYBOARD for 48K Spectrum (with Halyet) £5 Tel 061 748 7822

FOR SALE Currah micro speech as new with booklet and tape £20 or swap for sound booster plus £10 (Spectrum) Please write to C S Rainer 2 Mill Hill Road Hinckley Leicestershire

QL COMPUTER inc S/W chess terminal Panelle Interface £335 Tel 01 249 5885 after 4pm

THE FUZION OF MIND AND MACHINE

CONFUZION

ADVENTURE HELPLINE

Kentilla on Spectrum. How do you launch the wooden boat into the serpent axe? B Fox, 6 Lawson Close Aldridge Walsall W Midlands (0922 83230)

Jewels of Babylon on Spectrum I can't get past the crocodile natives or crab J McKellar 198 The Hornbeams Harlow Essex.

Colditz on Spectrum. How do I cross the parcels office a second time how do I get the floorboard, and what do I do in the sewer? Nigel Heyward 8 Cross Terrace Sling Tregarth, Bangor Gwynedd.

Valkyrie 17 on Spectrum. How do I get the plane going? Who is the man you have to kill? How do you kill him? Chris Gothard 6 Ivy Close, Uttoxeter, Staffs

Aztec Tomb adventure on C64. Having got sword rope jam jar cloak etc bee once fish, how do get into the forest and which plants need water? S Prues 38 Derwent Ave, Rayleigh, Essex.

Adventureland I on Vic 20. How do I wake the dragon and how do you get the thing in the lava out? Timothy Jones 77 Watermead Bedfont Middx.

Wapton Village Race on Amstrad. How do you get past the parrot? Charles Taylor Meadowside Forcett, Richmond, W Yorks.

Fennoda Diamond on Enterprise How do I open the trapdoor? E S Beadle 61 Waterson Rd, Chadwell-St Mary Essex

Stolen Lamp on Electron. I cannot get back through the dark room with tab lamp Bill Hanna, 1 Skandoe Cres Edinburgh (031-337 1163)

Return to Eden on Amstrad. How do I get out of the mole's hill tunnel and what do I do with the skyhook? John Skinner 98 Park Drive Ingatestone, Essex

Mystery of Munroe Manor on C64. How do you open the cupboard in the bedroom and what do you do after you've opened it? Jason Sarkins 99 Desborough, Harford Huntingdon.

COMPUTER SWAP

Computer Swap entries are limited to 30 words Either fill in the accompanying form and send to Computer Swap *Popular Computing Weekly* 12-13 Little Newport Street, London WC2H 7PP or telephone 01-437 4343

All software offered through computer swap must be in original condition and for private sale only

It cannot be swapped
Warning It is illegal to advertise pirated software

COMPUTER SWAP

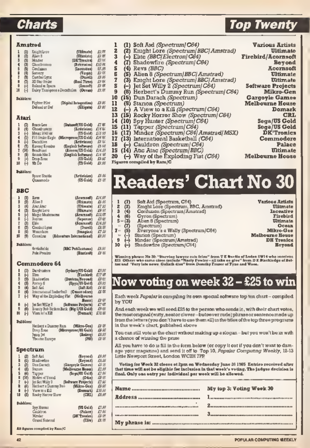
Please write your copy in capital letters on the lines below

Name ....

Address ....

....

Telephone ....



Charts

Amstrad

1	(1)	Knight Lore	(Ultimate)	£9.95
2	(2)	Alien 8	(Ultimate)	£9.95
3	(5)	Minder	(DK'Tronics)	£9.95
4	(3)	Ghostbusters	(Activision)	£10.95
5	(9)	Confusion	(Incentive)	£6.95
6	(4)	Sorcery	(Virgin)	£9.95
7	(8)	Combat Lynx	(Durell)	£8.95
8	(7)	3D Star Strike	(Real Time)	£9.95
9	(–)	Roland in Space	(Amsoft)	£9.95
10	(–)	Daley Thompson's Decathlon	(Ocean)	£8.95

Bubblers:

Fighter Pilot	(Digital Integration)	£8.95
Defend or Die	(Alligata)	£7.95

Atari

1	(7)	Bruce Lee	(Datasoft/US Gold)	£7.95
2	(6)	Ghostbusters	(Activision)	£14.95
3	(–)	Mines 2049 er	(US Gold)	£12.95
4	(1)	F15 Strike Eagle	(Microprose/US Gold)	£14.95
5	(–)	Decathlon	(Activision)	£9.95
6	(9)	Kissing Koussins	(English Software)	£5.95
7	(10)	Beachead	(Access/US Gold)	£14.95
8	(5)	Smash Hits 3	(English Software)	£14.95
9	(–)	Drop Zone	(US Gold)	£9.95
10	(–)	Mr Do	(US Gold)	£9.95

Bubblers:

Space Shuttle	(Activision)	£9.95
Quasimodo	(US Gold)	£9.95

BBC

1	(3)	Revs	(Acornsoft)	£14.95
2	(2)	Alien 8	(Ultimate)	£9.95
3	(4)	Atic Atac	(Ultimate)	£7.95
4	(5)	Knight Lore	(Ultimate)	£9.95
5	(–)	Magic Mushrooms	(Acornsoft)	£12.95
6	(–)	Repton	(Superior)	£9.95
7	(7)	Elite	(Acornsoft)	£14.95
8	(7)	Combat Lynx	(Durell)	£8.95
9	(6)	Wizardore	(Imagine)	£7.95
10	(8)	Gremlins	(Adventure International)	£9.95

Bubblers:

Battlefields	(BBC Publications)	£9.95
Pole Position	(Atarisoft)	£9.95

Commodore 64

1	(1)	Dambusters	(Sydney/US Gold)	£9.95
2	(–)	Elite	(Firebird)	£17.95
3	(2)	Shadowfire	(Denton/Beyond)	£9.95
4	(3)	Pastop 6	(Epyx/US Gold)	£9.95
5	(4)	Soft Aid	(Soft Aid)	£4.95
6	(4)	International Basketball	(Commodore)	£5.99
7	(–)	Way of the Exploding Fist	(Melbourne House)	£9.95
8	(–)	Jet Set Willy 2	(Software Projects)	£7.95
9	(6)	Bounty Bob Strikes Back	(Big 5/US Gold)	£9.95
10	(–)	View to a Kill	(Domark)	£10.95

Bubblers:

Herbert's Dummy Run	(Mikro-Gen)	£9.95
Drop Zone	(Microprose/US Gold)	£9.95
Jump Jet	(Anirog)	£9.95
Theatre Europe	(PSS)	£9.95

Spectrum

1	(2)	Soft Aid	(Beyond)	£9.95
2	(1)	Shadowfire	(Beyond)	£9.95
3	(7)	Dun Darach	(Gargoyle Games)	£9.95
4	(8)	Starion	(Melbourne House)	£7.95
5	(6)	Tapper	(Sega/US Gold)	£7.95
6	(10)	Nodes of Yesod	(Odin)	£9.95
7	(–)	Jet Set Willy 2	(Software Projects)	£7.95
8	(6)	Herbert's Dummy Run	(Mikro-Gen)	£9.95
9	(–)	View to a Kill	(Domark)	£10.95
10	(7)	Rocky Horror Show	(CRL)	£8.95

Bubblers:

Spy Hunter	(US Gold)	£7.95
Cauldron	(Palace)	£7.95
Minder	(DK'Tronics)	£9.95
Grand National	(Elite)	£8.95

All figures compiled by Ram/C

Top Twenty

1	(1)	Soft Aid *(Spectrum/C64)*	Various Artists
2	(2)	Knight Lore *(Spectrum/BBC/Amstrad)*	Ultimate
3	(–)	Elite *(BBC/Electron/C64)*	Firebird/Acornsoft
4	(7)	Shadowfire *(Spectrum/C64)*	Beyond
5	(4)	Revs *(BBC)*	Acornsoft
6	(5)	Alien 8 *(Spectrum/BBC/Amstrad)*	Ultimate
7	(3)	Knight Lore *(Spectrum/BBC/Amstrad)*	Ultimate
8	(–)	Jet Set Willy 2 *(Spectrum/C64)*	Software Projects
9	(8)	Herbert's Dummy Run *(Spectrum/C64)*	Mikro-Gen
10	(15)	Dun Darach *(Spectrum/C64)*	Gargoyle Games
11	(9)	Starion *(Spectrum)*	Melbourne House
12	(–)	A View to a Kill *(Spectrum/C64)*	Domark
13	(15)	Rocky Horror Show *(Spectrum/C64)*	CRL
14	(10)	Spy Hunter *(Spectrum/C64)*	Sega/US Gold
15	(11)	Tapper *(Spectrum/C64)*	Sega/US Gold
16	(17)	Minder *(Spectrum/C64/Amstrad/MSX)*	DK'Tronics
17	(13)	International Basketball *(C64)*	Commodore
18	(–)	Cauldron *(Spectrum/C64)*	Palace
19	(14)	Atic Atac *(Spectrum/BBC)*	Ultimate
20	(–)	Way of the Exploding Fist *(C64)*	Melbourne House

Figures compiled by Ram/C

Readers' Chart No 30

1	(1)	Soft Aid (Spectrum, C64)	Various Artists
2	(2)	Knight Lore (Spectrum, BBC, Amstrad)	Ultimate
3	(4)	Confuzion (Spectrum/Amstrad)	Incentive
4	(6)	Gyron (Spectrum)	Firebird
5=	(3)	Alien 8 (Spectrum)	Ultimate
=	(7)	(Spectrum)	Ocean
7=	(5)	Everyone's a Wally (Spectrum/C64)	Mikro-Gen
=	(–)	Starion (Spectrum)	Melbourne House
9	(–)	Minder (Spectrum/Amstrad)	DK Tronics
10	(–)	Shadowfire (Spectrum/C64)	Beyond

Winning phrase No 30: "Starving lawyer eats felon" from T E Burdis of London SW14 who receives £25. Others who came close include "Nasty Fowler – all take no give" from D K Blackledge of Bolton and "Very late news: Goliath dies" from Dorothy Frazer of Tyne and Wear.

Now voting on week 32 – £25 to win

Each week *Popular* is compiling its own special software top ten chart – compiled by YOU

And each week we will send £25 to the person who sends in, with their chart votes, the most original (witty, neat or clever – but never rude) phrase or sentence made up from the letters (you don't have to use them all) in the titles of the top three programs in this week's chart, published above

You can still vote in the chart without making up a slogan – but you won't be in with a chance of winning the prize

All you have to do is fill in the form below (or copy it out if you don't want to damage your magazine) and send it off to Top 10, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP

Voting for Week 32 closes at 2pm on Wednesday June 26 1985. Entries received after that time will not be eligible for inclusion in that week's voting. The judges decision is final. Only one entry per individual per week will be allowed.

Name .... **My top 3: Voting Week 30**

Address .... 1. ....

.... 2. ....

.... 3. ....

My phrase is: ....

SHEER GENIUS

It seems ages since Leisure Genius produced *Monopoly* for the Commodore 64 Yet only now has the Spectrum version of the capitalist classic been released.

one end in the top two thirds of the screen – it is drawn in perspective and so appears to disappear into the distance. However, when you actually play, the bottom third of the screen displays the squares as you pass over them allowing you to see clearly where you've landed.

All banking operations are automatic which means it isn't possible to cheat by taking more money than your entitled to Similarly, there is no computer facility to hide your opponents' money under the carpet

Apart from these unexplained omissions and an "oh dear I've jogged the board" option, this is an excellent program.

Program *Monopoly*
Price *£9 95*
Micro *Spectrum*
Supplier *Winchester Holdings*
3 Montagu Row
London W1H 1AB

DORKBLAST

Dork's Dilemma is a new machine-code arcade game for the C16 That in itself is worth mentioning in fact the game is related, it seems to me, to a Spectrum game called *Eric and the Floaters.*

There are 25 screens, all variations on the same thing – the feature of walls and blocks are simply relocated with a different colour The main idea of the game is that your little sprite darts about the screen planting bombs which will blow up other, nasties, sprites The bomb blast will not extend through the walls, consequently the idea of the game is to get baddies together and drop a bomb whilst ensuring in the few seconds you have before it explodes you have got safely behind a wall

It's really fairly entertaining The bomb blast/wall idea, whilst not I think original, hasn't been done to death and does allow for the introduction of strategic thought Graphically this is nothing special, though, and on other machines it would make a goodish £1 99 game On the C16 it is one of the better games

Program *Dork's Dilemma*
Price *£6 95*
Micro *C16*
Supplier *Gremlin Graphics*
Alpha House
10 Carver Street
Sheffield S1 4FS

PICTURE THIS

The one thing the *QL* is not short of is a graphics package, yet there are several of them.

The latest and possibly cheapest is *Paint Master* which features not only the usual bunch of designing commands, but a short graphics adventure that shows how the end results can be used in other programs

It isn't the most sophisticated graphic designer I've seen but it'll do most things The usual system of cursor movement combined with command words which take place at the current location of the cursor is adopted Basic commands include *Arc, Box, Line, Circle* and *Triangle*

There are a couple of more sophisticated features, one of which – *Follow* – I've not seen before It is a surprisingly useful facility that lets you move two cursors simultaneously keeping relative distances the same, ideal for regular designs

Another command, *Position*, lets you define a picture and redraw it on the screen at any other position you like as many times as you like.

As a basic utility this is good enough The free adventure game, incidentally, is pretty bad, but more to the point the graphic illustrations are mostly unimpressive – they look like simple Spectrum screens

Program *Paint Master*
Price *£14 95*
Micro *QL*
Supplier *Shadow Games*
70 Goosecre
Cheddington
Leighton Buzzard
Beds

IS IT A BIRD

Adventure game credibility doesn't come much higher than Brian Howarth and Mike Woodroffe who between them produce some of the best puzzles in the classic form.

Together they have produced *Super Gran*, a graphics adventure (with a few simple animated sequences) based on the popular kids' program Popular with some people, anyway The game is available, albeit in some cases without graphics, for virtually every machine under the sun.

The graphics on the version I saw, for the Spectrum, were really very good, with lots of detail and character The text analysis is reasonably extensive, where a series of commands may be separated by commas and a lot of time saved

Super Gran may be a bit small scale for some hardened adventure freaks – some people aren't satisfied unless they have to do battle with the Lord of Evil himself with a couple of coach loads of screaming minions for starters.

Super Gran is basically milder stuff, intended like the TV programme for younger fods

Not that the game entirely lacks the essential elements of violence, though the first thing you hear when the game begins is a cry for help

The game zips along quickly without a pause for breath – it should do well.

Program *Super Gran*
Price *£7 95*
Micro *Spectrum*
(+ others)
Supplier *Tynesoft*
Addison Industrial Estate
Avenue West
Blaydon
Tyne and Wear
NE21 4ZE

New Releases

FRUSTRATING

Trivial Pursuits, I am told by those who have played it, is the ideal quiz game for drunks to play after the Friday night midnight curry Since the questions are all utterly unimportant and irrelevant, there is ample opportunity for people to make up their own answers to the questions and generally fall about in hysterical mirth.

What happens when you put *Trivial Pursuits* on a computer? It's incredibly boring, tedious and frustrating, that's what.

Monster Trivia by US Gold is the progam in question The program is basically a large number of data files holding 2,000 trivial questions. The plot has a monster that is beating on the door threatening to molest you if get too many answers wrong

The problem is this Firstly nobody has bothered to alter the questions on the tape for the UK market – surely a simple operation – and so much of the trivia is also very obscure, referring as it does to people and subjects which are exclusively American.

Worse still, the computer appears to only accept the answer expressed in one particular way Answering 9 to 'What Beethoven Symphony also features Chorus' I got a wrong answer – I should have typed in Ninth. Intensely irritating, and at £9 95 you only need a couple of them to remain unbought to be able to afford the real thing

Program *Monster Trivia*
Price *£9 95*
Micro *Commodore 64*
Supplier *US Gold*
Unit 10
Parkway Industrial Centre
Heneage Street
Birmingham
B7 4LY

PAINTWORK

Microdeal has been keeping a relatively low profile recently but has now returned, with a budget range of games.

Mostly they are for the Dragon and therefore represent good news for hard-pressed owners of that machine, but a couple are for the Commodore 64

It's getting quite difficult to evaluate low price games these days Many recent Mastertronic releases have been better than the £8 95 jobs from other companies, so I'm not sure to what extent one should adopt the 'well it's cheap' apology for games one wouldn't otherwise rate

Crazy Painter is a good example The idea of the game is simple – paint in the whole screen with a colour before your paint runs out The difficulty lies in the fact that various animals, casual labourers and balloons ruin parts of your paintwork and you have to keep going over bits Complete a screen and onto the next one – so it goes

There's nothing special about the program, it's reasonably enjoyable and the graphics are not bad At £1 99 it's probably a couple of hours worth of entertainment and I guess that's a fair rate of exchange

I have a feeling, though, that pretty soon what people expect from a cheap game will be a lot higher than this

Program *Crazy Painter*
Price *£1 99*
Micro *Dragon 32*
Supplier *Microdeal*
41 Truro Road
St Austell
Cornwall

ILLUSTRATED

Smuggler's Cove is a graphics adventure for the Amstrad Graphics adventure in the old sense, ie, a text adventure with graphic illustrations for each scene

The graphics are fairly plain, not in the Interceptor league and take a while to draw.

Nevertheless, they have a certain character and add something to the important part which is the actual text element.

The title implies that this is something to do with pirates and salty seadogs and this impression is reinforced by the irritating 'OK me dear' and 'och aye me hearties' style of computer response.

The plot was quickly engrossing, though, with a lot of possibilities in the opening sections which I always find is the key to getting into an adventure

The first object is a rusty torch and you find yourself in a maze of dark tunnels. Fortunately the instructions to get the torch going are relatively simple

A good, well-designed game.

Program *Smuggler's Cove*
Price *£6 95*
Micro *Amstrad*
Supplier *CRL*
CRL House
9 Kings Yard
Carpenters Rd
Stratford
London E15

CLEANER

Amstrad owners now have no excuse whatsoever for not having their tape heads aligned properly – there are at least three packages on the market doing exactly this job

This Week

Program	Type	Micro	Price	Supplier
Biology 1	Ed	Amstrad	£7 99	School Software
Pool	S	Amstrad	£8.95	Amsoft
Snooker	S	Amstrad	£8 95	Amsoft
Azimuth Adjustment	Ut	Amstrad	£4 99	Kiltdale
LVL Rom	Ut	BBC	£29 95	LVL
World Cup	S	C16	£6 95	Artic
Crazy Painter	Arc	Commodore 64	£1 99	Microdeal
War Machine	Arc	Commodore 64	£1 99	Microdeal
Chemistry 2	Ed	Commodore 64	£7 95	School Software
Physics 1	Ed	Commodore 64	£7 95	School Software
World Cup II	S	Commodore 64	£7 95	Artic
Music Studio	Ut	Commodore 64	£14.95	Activision
Bandito	Arc	Dragon	£1 99	Microdeal
Bubble Buster	Arc	Dragon	£1 99	Microdeal
Fearless Freddie	Arc	Dragon	£1 99	Microdeal
Pit Fiend	Arc	Dragon	£1.99	Microdeal
Robin Hood	Arc	Dragon	£1 99	Microdeal
Slide	Arc	Dragon	£1 99	Microdeal
Tea Time	Arc	Dragon	£1 99	Microdeal
The Lands of Havoc	Arc	Dragon	£1 99	Microdeal
Teppler	Arc	Dragon	£1 99	Microdeal
Night Nurse	Ad	QL	£12.95	Shadow Games
Paint Master	Ad	QL	£14 95	Shadow Games
Star Guard/Invaders	Arc	QL	£14.95	Shadow Games
Go to Hell	Ad	Spectrum	£6 95	Artic
Project X Micro Man	Ad	Spectrum	£2.99	Compass
Super Gran	Ad	Spectrum	£7 95	Tynesoft

New Releases

Pick of the week

PROFESSIONAL MUSIC

The Commodore 64, for certain obvious reasons is definately becoming the micro for music.

Not only is it getting the hardware interface that'll let you hook it into Midi-based electronic keyboards but the software for music is being developed with a degree of effort and professionalism mostly lacking in packages for other micros

The Activision *Music Studio* package just about let's you do whatever you could possibly wish to do given the restrictions of three channels and includes not only notion but also a powerful sythesizer

Moving between the sound creation section and the composer is instantaneous – no loading up of different sections – and the whole packages is Icon driven. Computer interfacing doesn't come any cooler than that.

The sound engineer section lets you shoot around a screen moving a pointed cursor at the various sound elements of Envelope wave form, filter type, filter frequency and resonance You can hear the results immediately and define a new sound for each voice These voices can then be used with music editor

The music editor uses a similar system of Icons with a cursor 'dragging' notes to the required position of a stave of music Note length and rests are controlled in a similar way, and again the results can be heard immediately You can even enter words underneath the stave You do need to know some basics of music notation but to help you there is a tutorial on the subject as part of this package

Music Studio is a joy to use and the Icons are more than mere trendiness For once an Activision title doesn't seem overpriced. Buy it even if you already have a music package

Program *The Music Studio*
Price *£14 95*
Micro *Commodore 64*
Supplier *Activision*
15 Harley House
Marylebone Road
London NW1

The cheapest is the most recent, the Azimuth Adjustment program and head cleaning tape from Kiltdale

Kiltdale has a certain extra credibility through its history as a tape duplicating organisation. Another positive feature is the fact that the tape-head cleaner, a separate tape in other packages, is here presented as part of the program tape. The entire package is therefore one tape and a small screwdriver

There's nothing flashy about the adjustment system, no graphs and things like other programs but simply the border colour which changes according to the adjustment A screen-load displays most of the relevant diagramatic information about where to put the screwdriver, etc.

At £4.99 it's very useful, possibly the most useful, basic utility you could buy If it lacks the extra glossiness of some of the other packages it is also neater and cheaper

Program *Azimuth alignment tape*
Price *£4 99*
Micro *Amstrad*
Supplies *Kiltdale*
Liddington
Industrial Estate
Leckhampton
Cheltenham
GL53 0DL

Azimuth Adjustment Program and Head Cleaning Tape

OVERRATED

I've got this theory that the majority of so-called educational software is utterly superfluous to the needs of the average student, being thoroughly overrated by most parents and overpriced by the companies At least the latest batch of programs from School Software avoid the latter evil – being £7 95 plus VAT – but as far as content and presentation are concerned, ho hum, there is nothing special here, I'm afraid

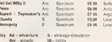
The company has produced Physics, Chemistry and Biology packages – all at around O level standard The subjects are presented as ten fields, each with their own set of revision notes and questions which you select from a start up menu. All reasonably competent stuff so far, but any educational program must surely stand or fall on content.

I selected *Chemistry 1* to look at – and was immediately disappointed. The odd spelling mistake can be forgiven, but is there really a controversy over whether Atomic Number refers to Protons or Neutrons? The notes said one, while the questions said the other

I think any student's money would be better spent on a decent text book than the present generation of 'educational' computer programs

Program *Chemistry 1*
Price *£7 95 + VAT*
Micro *Amstrad*
Supplier *School Software*
Meadowvale Estate
Raheen
Limerick
Ireland

This Week



Boulder Dash	Arc	Spectrum	£6 95	Orpheus
Games Compendium	Arc	Spectrum	£6 95	Artic
Jet Set Willy II	Arc	Spectrum	£6 95	Software Project
Paws	Arc	Spectrum	£6 95	Artic
Rupert + Toymaker's	Arc	Spectrum	£7 95	Argus
Cluedo	S	Spectrum	£9 95	Leisure Genius
Monopoly	S	Spectrum	£9 95	Leisure Genius

Key **Ad** – adventure **S** – strategy-simulation
Arc – arcade **Ut** – Utility
Ed education

Activision, 15 Harley House Marylebone Road London NW1, 01-486 7588 **Amsoft,** Brentwood House, 169 Kings Road Brentwood, Essex 0277 230222 **Argus,** No 1 Golden Square London W1R 3AB, 01-437 0626 **Artic** Main Street Brandesburton Driffield YO25 8RL, 0401 43553 **Compass** 63 Cozens Road Norwich Norfolk NR1 1JP **LVL** Scientific House Bridge Street Sandiacre Nottingham NG10 5BA 0602 394000 **Leisure Genius** 3 Montagu Row London W1H 1AB 01-935 4622 **Microdeal** 41 Truro Road St Austell Cornwall PL25 5JE 0726 73456 **Orpheus,** 1 The Smithy Church Farm, Untley St George Near Sandy, Beds **School Software** Meadowvale Raheen Limerick, Ireland **Shadow Games,** 70 Gooseacre Cheddington Near Leighton Buzzard Beds, 0296 668740 **Software Project** PO Box 12, Bearbrand Complex Allerton Road Woolton Liverpool L25 7SF, 051-428 9393 **Tynesoft,** Addison Ind Estate Blaydon upon Tyne Tyne and Wear LE21 H2E 091-414 4611

Out of focus

With so many now ready to declare the micro industry dead and buried, there has never been a greater need for an annual industry awards ceremony. An occasion to recognise and celebrate the successes and considerable achievements of what is after all still a very new industry.

Unfortunately the closest we got to a micro 'oscars' – their phrase not mine – is the British Micro Computing Awards held earlier this month. And what a shambolic affair it was.

Held amid the art-deco splendour of London's Park Lane Hotel the event drowned itself, weighed down by the number of participants who took credit for arranging the occasion. First we had the organisers – Thames TV, VNU Publications and the *Sunday Times*. Then there were the sponsors, Barclays, WH Smiths and Computer People.

Incredibly the winners of the awards – whose achievement we were all there to celebrate – were prohibited from saying one word in acceptance of their crystal 'eggs'. Instead we had to sit through terminally pompous speeches on behalf of the organisers and messages of hope from Norman Tebbit, Neil Kinnock, David Owen and David Steel. Rather like the reading of the telegrams at a wedding.

But the fatal flaw was the complete confusion of the awards themselves. Who did win? I'm sure I don't know. Which was the top home micro of 1984? Was it the Atari 800XL which won the *What Micro?* Home Micro Award? Or was it the QL which won the *Personal Computer World* Home Micro Award? Which was the top business micro – the Apricot Xi (Computer People Business Micro Award) or the Apricot Portable (*Personal Computer World* Business Micro of the Year). What is the difference between the *Personal Computer World* Home Software Award and the Thames TV *Database* Home Software Award? And so it went on, doubling up across most of the awards.

The key to winning seemed to be to avoid getting nominated in more than one of the duplicated categories.

Worse still, in some of the duplicated award categories the judges – apparently unable to decide on an outright winner – gave the award jointly to two or more of the nominees.

In short, the British Microcomputer Awards proved to be a nightmarish confusion of organisers' egos, ill-conceived and without focus. And I thought it was always supposed to be the award winners who postured and paraded at these events.

Yet a recognised annual awards event is greatly needed and of the three contenders the British Microcomputing Awards is the most promising. The Computer Trade Association Awards are very trade-orientated and too much a low-key industry event. And the 'Quickbyte' Christmas Awards is really the Alternative awards, tongue-in-cheek and either hugely amusing or very depressing – depending on your opinion of adolescent schoolboy humour.

The British Microcomputing Awards on the other hand has everything going for it – it is professionally organised, and through its Thames TV and Sunday Times tie-ins it has the potential to become a highly respected and influential event.

But it must sort out the award categories by next year – this year's awards were a farce.

David Kelly

Square bashing

Puzzle No 164

The Upper Third at Greyfriars School were engrossed with John van Neumann's 'middle of the square' theory of generating random numbers.

His method of producing these numbers involved choosing a 'seed' number of d digits with which the operator would commence. This number was then squared, and the middle d digits of this square was then extracted and the whole operation repeated as often as desired. In this way, a list of random digits could be built up.

Unfortunately, as the Upper Third were to learn, there were a number of flaws in this system. Some numbers when subjected to this 'middle of the square' routine even turned out to be self-generating. That is, they duplicated themselves immediately.

For their homework that day, the class at Greyfriars had to find those four-digit numbers that were self-generating. In order to produce a uniform result any four-digit numbers which produced seven-digit squares had a zero added to the left hand end of the square. Then the first two and last two digits were deleted leaving the central four digits.

They were able to find 2500 and 7600 quite easily – but are there any more?

Solution to Puzzle No 159

Jake and Hank's addresses were 7100 and 7101. The product of these two numbers is 50417100 which corresponds to the word 'PEARTREE'.

```
10 FOR N=3168 TO 9998
20 LET A=N*(N+1)
30 LET A$=STR$(A)
40 IF MID$(A$,2,1)=MID$(A$,7,1)AND MID$(A$,2,1)
   =MID$(A$,8,1)AND MID$(A$,4,1)=MID$(A$,6,1)
   THEN PRINT N,A
50 NEXT N
```

The program tests the expression N*(N+1) to determine if the digits in the number so obtained correspond to the word 'PEARTREE'. That is, a result in which the second, seventh, and eighth digits are alike, as are the fourth and sixth.

Winner of Puzzle 159

The winner is Hugh Walker of Burpham, Guildford who receives £10.

Rules

The closing date for Puzzle No 164 is July 24.

The Hackers

